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Contribution from the Bureau of Plant Industry WM. A. TAYLOR, Chief

Washington, D. C.

PROFESSIONAL PAPER

July 25, 1918

CITRUS-FRUIT IMPROVEMENT A STUDY OF BUD VARIATION IN THE VALENCIA ORANGE

By

A. D. SHAMEL, Physiologist in Charge, L. B. SCOTT, Pomologist, and C. S. POMEROY, Assistant Pomologist, Fruit-Improvement Investigations
Office of Horticultural and Pomological Investigations

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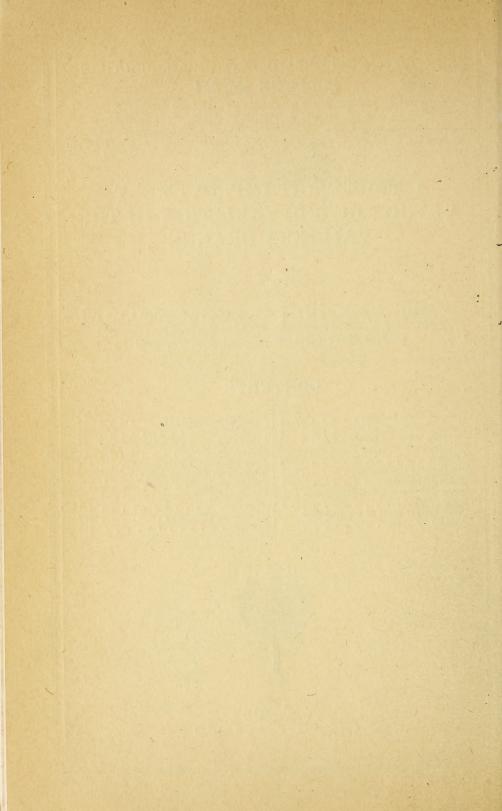
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By A. D. Shamél, Physiologist in Charge, L. B. Scott, Pomologist, and C. S. Pomeroy, Assistant Pomologist, Fruit-Improvement Investigations, Office of Horticultural and Pomological Investigations.

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CALIFORNIA CITRUS VARIETIES.

The commercially important varieties of citrus fruits grown in California are the Washington Navel, the Valencia, and the Mediterranean (Mediterranean Sweet) oranges; the Dancy tangerine; the Eureka and Lisbon lemons; and the Marsh (Marsh Seedless) grapefruit. Other less important varieties grown only to a limited extent include the St. Michael, Navelencia, Ruby blood, and Malta blood oranges, and the Villafranca lemon. Of the two leading orange varieties the Washington Navel is by far the most widely cultivated, producing an annual crop of about 27,000 carloads of fruit.² This variety ripens its fruit from November to June, inclusive. The Valencia ripens its fruit from June to October, inclusive, and produces

² Wallschlaeger, F. O. The world's production and commerce in citrus fruits and their by-products. Citrus Prot. League, Cal., Bul. 11, p. 70. 1914.

¹ This is the second in a series of publications summarizing the citrus-fruit improvement investigations of the Department of Agriculture. The first report of this character was presented in the following publication: Shamel, A. D., Scott, L. B., and Pomeroy, C. S. Citrus-fruit improvement: A study of bud variation in the Washington Navel orange. U. S. Dept. Agr. Bul. 623, 146 p., 16 figs., 19 pl. 1918. In that billetin the methods of conducting the investigational work are described more in detail than in the present publication.

an annual crop of about 8,500 carloads. All other varieties of oranges grown in California produce annually about 4,500 carloads of fruit, ripening their crops mostly in the spring and early summer months. At the present time the increase in the plantings of the Valencia orange in California is greater than that of any other orange variety. For this reason studies of the characteristics of the variety and methods of improving and increasing its production through bud selection during propagation are of special interest.

HISTORY OF THE VALENCIA VARIETY.

The Valencia orange (Citrus aurantium sinensis L.) was introduced into California from at least three sources at about the same time. According to William Wood, horticultural commissioner of Los Angeles County, A. B. Chapman and George H. Smith, of that county, received an unlabeled package of orange trees from Thomas Rivers, of London, England, in 1876. Mr. Chapman planted these trees in the nursery on his ranch at San Gabriel, Cal. Buds were propagated from all of these trees and grown until they came into bearing. The only variety which proved to be of value was one which Mr. Chapman called Rivers Late. Col. J. H. Dobbins, of San Gabriel, secured buds of this variety, and when the trees propagated from these buds came into bearing a shipment of the fruit was sent to eastern markets. These oranges brought \$4 per box. As a result of this experience the variety became very popular and was widely planted by citrus growers. At that time a citrus grower from Valencia, Spain, was shown the fruit and identified it as the variety called in Spain "La Naranga Tarde de Valencia." Mr. Chapman adopted this name, and it has since been called the Valencia Late, or, more commonly, the Valencia orange.

The other sources of trees of this variety were introductions into California from Florida by several southern California nurserymen, particularly Frost and Burgess² and Twogood and Cutter, located at Riverside. The variety had been introduced into Florida by two different persons. About 1870 General Sanford, of Palatka, Fla., obtained a variety of orange from the Rivers nurseries. This variety was labeled Brown.³ Shortly after the Sanford introduction Mr. E. H. Hart, of Federal Point, Fla., introduced the variety into Florida from the Parsons nursery of Flushing, N. Y.⁴ The Parsons nurseries had received the trees from the Rivers nurseries. In shipping the trees to Florida the label was lost. When these trees fruited Mr. Hart exhibited samples of the fruit at a meeting of the Florida State

¹ Letter from Mr. William Wood, Los Angeles, Cal., Jan. 5, 1916.

² Letter from Mr. George Frost, Riverside, Cal., Jan. 20, 1916.

³ Statement received from Mr. Daniel Houston, Zellwood, Fla., May 9, 1916. Mr. Houston was formerly manager of General Sanford's properties.

⁴ Letter of Mr. E. H. Hart to Prof. E. H. Van Deman, U. S. Department of Agriculture, Apr. 25, 1888.

Horticultural Society and the nomenclature committee of that society gave them the name Hart's Tardiff, which was successively changed to Hart's Tardy and Hart's Late. The American Pomological Society has adopted the name Hart for this variety, but the names mentioned above are still in common use by nurserymen and growers in Florida. On comparison, the fruits of the Hart introduction were found to be identical with those grown by General Sanford under the name Brown. Budded trees of both the Sanford and Hart introductions were included in the earlier shipments of trees from Florida to California.² It was soon found, however, that the Brown, Hart, and Valencia were the same variety, and as it seemed probable that the California Valencia Late and the Florida introductions were nearly related and came from the same original source. the name Valencia is used in California to designate all trees which have descended from these different introductions. Orchards grown from trees or buds received from these sources show only minor differences, if any, and when present these are of such a character as may be due to local soil and climatic conditions rather than to inherent varietal differences. As a rule, the Chapman introduction of Valencia orange has a more globular shape than the Florida strains and is said to ripen somewhat earlier. The Chapman trees usually are more upright in habit of growth than those of the Florida Valencia, but not enough reliable information is available regarding this or other comparative varietal tree and fruit characters of these introductions for any final conclusions as to inherent differences between them.

The performance records of individual trees and the observations, illustrations, and notes of trees and fruits contained in this bulletin have all been obtained from trees which trace back to the Florida introductions now commonly known in California as the Valencia orange. These records and observations have been made in the orchards of southern California and for the most part in those located in Riverside County.

VARIABILITY WITHIN THE VARIETY.

Previous to this study it had been generally supposed that one Valencia tree was as good as another and that for a series of years they would produce practically equivalent crops. Contrary to this, these investigations have proved that instead of the Valencia variety being stable and constant, it is composed of several distinct strains which differ from each other in many characters of fruit and tree. The term "strain" is used here to designate a group of individuals of a horticultural variety which differ from all other indi-

¹ Letter of Mr. E. H. Hart to Prof. E. H. Van Deman, U. S. Department of Agriculture, June 10, 1887. ² Statement received from Mr. Daniel Houston, Zellwood, Fla., May 9, 1916.

viduals of the variety in one or more constant and recognizable characteristics and which are capable of perpetuation through vegetative propagation. Within the various strains there are variations in the amount and commercial quality of the fruits produced by the individual trees. The variability of individual-tree production in the orchard as regards quantity, commercial quality, time of ripening, and other characteristics is of the highest importance to growers of fruit varieties.

The variability of the trees and fruits within the variety is of fundamental significance from the standpoint of the grower and in any study of the conservation and stabilization of the variety as a whole.

The Valencia strains are distinguished by differences in habits of growth, time of ripening fruits, quantity and quality of crops, and other definite and marked characteristics. The trees of certain strains were found to have upright habits of growth, while those of other strains are drooping or spreading. The trees of some of the strains produce, as a rule, full crops of the best-grade fruit, while those of other strains produce light crops of low-grade fruit. The trees of at least one of the strains produce early-ripening crops, while those of other strains produce later ripening fruits. The leaves of the trees of some of the strains are large, broad, and bluntly rounded in shape, while trees of other strains have small, narrow, and sharply pointed leaves.

In many cases, fruits of two or more of the different strains have been found on the same tree grown from a single bud and therefore upon the same individual stock. Such instances have shown the fallacy of the theory that the different strains are variations due to climatic or soil conditions or the influence of different stock. Later, it was found that the different strains occurring in a single tree could be isolated through bud selection in propagation, thus proving that the differences observed were true inherent cases of bud variation.

The mixture of strains in the Valencia orchards under observation was found to be so marked and frequent as to warrant careful investigations of their relative value. The results of these investigations, which have covered more than four years, together with suggestions for the isolation of the best strains of this variety through bud selection and for the stabilization of the variety through the propagation of only the most desirable strains, are set forth in the following pages.

OCCURRENCE AND FREQUENCY OF BUD VARIATIONS.

A casual observation of the Valencia orange trees selected for these investigations will reveal little of the startling condition of bud variability existing in the trees and their fruits. Several Valencia orange growers, with many years of experience in the culture of this variety, have expressed genuine surprise when some of the bud variations of foliage and fruits occurring on their trees have been pointed out to them. As a matter of fact, while bud variations have been known to exist in trees of this variety for some time, their frequency and importance have not been fully realized until very recently and as a result of these investigations.

Twelve important strains of the Valencia variety have been found and described during these investigations. Several other minor and less frequent variations have been found from time to time, but, so far as is now known, they are of little significance or importance in commercial orchard practice or in the present studies.

The total number of strains existing in the Valencia variety is not known. Additions are continually being made to the list, as knowledge of the variety grows and the extent of the investigations widens to include observations of a larger number of trees.

The extent of the occurrence of diverse strains of the Valencia variety in established bearing orchards has been found to be even greater than the occurrence of similar variations in Washington Navel groves. The percentage of off-type trees, i. e., marked variations from the best or Valencia strain, found in individual commercial orchards is practically the same as was found in Washington Navel orange orchards (from about 10 to approximately 75 percent), but a larger proportion of the Valencia orchards have shown the higher percentages of trees of variable strains.

The name Valencia has been applied to the best strain of the variety, because, as nearly as can be determined, it is similar in type of tree and of fruit to the original Valencia introductions into California which were propagated on account of their superior quality and productiveness. This strain bears the heaviest crops and the most desirable fruits of any of the strains of this variety under observation. It is the strain upon which the reputation of the variety has been founded and which under present conditions is the most desirable for cultivation in California.

As a rule, the younger Valencia orchards show a larger proportion of trees bearing inferior fruits than the older orchards. This condition indicates that the prevailing methods used in propagating this variety have resulted in the perpetuation of an increasingly large proportion of trees of undesirable strains.

OBJECTS OF THE INVESTIGATIONS.

The objects of the investigations reported in this bulletin are (1) to ascertain the variations which have taken place in the Valencia orange through bud variation and to learn the comparative value of

¹ Shamel, A. D., Scott, L. B., and Pomeroy, C. S. Citrus-fruit improvement: A study of bud variation in the Washington Navel orange. U. S. Dept. Agr. Bul. 623, 146 p., 16 fig., 19 pl. 1918.

the different strains for commercial fruit production; (2) to determine the extent to which undesirable variations have been propagated, as shown by the percentage of such inferior trees in the present bearing groves; and (3) through improved methods of propagation to control the extent to which undesirable variations in the future shall enter into the population of commercial Valencia orange groves. Briefly stated, these investigations have been undertaken for the purpose of discovering practical methods for conserving and stabilizing the Valencia orange variety.

PLAN OF THE INVESTIGATIONS.

The investigations have been carried on by means of individualtree performance records and observations.

The term "performance record" is here used to designate the record of the quantity and the commercial quality of the fruits borne by an individual tree during one or more years.

The term "performance-record plat" as used in these investigations means a group of trees grown under comparable conditions and selected for the purpose of determining the relative behavior of the trees by means of individual-tree records of production, observations, and descriptive notes.

The primary conditions considered in the location of the performance-record plats of Valencia oranges in which the investigational work was conducted were (1) full-bearing trees planted on virgin land, so as to eliminate all possible influence of previous soil or cultural conditions: (2) uniform soil where little or no fertilizers of any kind had been applied and where uniform cultural treatments had been practiced from year to year; (3) the absence of any radical pruning or other tree treatment; (4) the absence or effective control of insect enemies and diseases; (5) trees in a normal, healthy condition, showing satisfactory vegetative growth; (6) a knowledge of the character of the stocks and the sources of the buds used in propagation; (7) sufficient elevation to assure natural protection from frost and other unfavorable conditions; and (8) the prospect of the control of the orchard by the same owners for a series of years.

These conditions, particularly those of soil and culture, are not conducive to large yields, but are favorable to the study of inherent individual-tree variability and behavior. As the object of these investigations is not the measurement of the highest possible yield or the study of the influence of cultural conditions on the production of large crops, but rather the behavior of trees under conditions as nearly natural as it is possible to secure in commercial citrus orchards in California, it was deemed wise in this selection to eliminate so far as practicable all local environmental influences and abnormal conditions.

The principal plats of Valencia oranges finally selected for individual-tree performance-record work are located in a citrus orchard of approximately 750 acres about equally divided between Valencia oranges, Washington Navel oranges, and Eureka lemons. A study of all the Valencia trees on this ranch was made before the plats of trees for detailed observation were finally selected. This selection was made with the idea of securing a representative lot of trees which would include typical trees of some of the most important strains of the variety. Trees to the number of 115 which had been planted in the fall of 1903 were selected. Actual performancerecord work was begun in 1912. Complete annual records secured from 105 of these trees for four successive years are available for study. Later in 1912 a plat of 9 trees of the Valencia strain was selected in another Valencia orchard several miles distant, where soil conditions are markedly different. In 1914 an additional plat of 55 trees was chosen in the same orchard where the first plat was located, mainly for the purpose of studying the individual-tree behavior of the Valencia or best strain of the Valencia variety. this publication the discussion of results will be confined to those secured from the records obtained from the plat first selected.

METHODS OF KEEPING PERFORMANCE RECORDS.

In securing the individual-tree performance records for investigational purposes¹ each tree is given a number, and the trees in the plats are marked annually with cloth streamers to prevent their being picked accidentally by the regular picking crew of the ranch. Each tree is picked separately, and all notes concerning the quantity and quality of fruit borne by that tree are recorded before the picking of the next tree is begun.

The fruits are assorted into three grades: (1) An Orchard grade, including all of the valuable first-class commercial fruits; (2) a Standard grade, including marked, misshapen, unevenly colored, or other blemished fruits which are distinctly of a second class in commercial quality, but still worthy of marketing; and (3) a Cull grade, consisting of fruits of such inferior quality as to be wholly unfit for the market. By means of a small mechanical sizer, similar to those in actual use in orange-packing houses, the fruits in the Orchard and Standard grades are sized into the commercial sizes varying from 288 to 80. The fruits of each size in each grade are counted and weighed and the notes recorded on forms arranged especially for this

¹ For a complete description of the methods followed in securing the investigational performance records see the following publication: Shamel, A. D., Scott, L. B., and Pomeroy, C. S. Citrus-fruit improvement: A study of bud variation in the Washington Navel orange. U. S. Dept. Agr. Bul. 623, 146 p., 16 fig., 19 pl. 1918.

Directions for securing performance records as a part of commercial orchard picking operations are presented in the following publication: Shamel, A. D. Citrus-fruit improvement: How to secure and use tree-performance records. U. S. Dept. Agr., Farmers' Bul. 794, 16 p., 4 fig. 1917.

purpose. The culls are not sized, but their number and weight are recorded.

The field notes are transferred to annual record sheets, illustrations of their use being shown in the upper part of section A of Table III, and these notes in turn are transferred to period record sheets, illustrations of the use of which are shown in other parts of the same table. Thus the record of each tree is assembled in one place for comparative study.

DESCRIPTIONS OF SOME OF THE IMPORTANT STRAINS.

In addition to the performance records, as opportunity permits descriptive notes are secured of typical trees and fruits of the different strains. Inasmuch as the greatest commercial importance lies in the character of the fruits, the main emphasis in these records is placed upon the characteristics of the fruits of the important strains and their relative commercial value.

Brief descriptions of some of the important Valencia strains arising from bud variations which have been found in the investigational performance-record plats are here given.

VALENCIA STRAIN.

The trees of the Valencia strain vary considerably in regularity of production and as a whole may be divided into three general classes: (1) Regular producers, (2) alternate-season producers, and (3) irregular producers, bearing full crops only at infrequent intervals. This condition indicates that the Valencia strain as here considered is probably made up of several minor strains, which upon further investigation may be classed among the major strains. The trees, as a rule, have an erect and spreading habit of growth, developing open heads with large rounded leaves.

The typical fruits of this strain, illustrations of which are shown in Plate I, are globular, with a tendency to flattened blossom ends; size medium; texture of skin smooth; color bright orange; rind thin; rag tender; juice abundant and sweet; seeds from none to 10, averaging in these observations about 3 per fruit. The fully ripened fruits have a good quality, inferior only to that of the Washington Navel orange among California citrus fruits. Under certain climatic conditions the ripe fruits on the trees are likely to start a new growth, resulting in the fruits turning green in color. This second development of green color is likely to disappear after picking, and its loss can be hastened by increasing the temperature and humidity conditions of the stored fruits.

¹ Shamel, A. D. Citrus-fruit improvement: How to secure and use tree-performance records. U. S. Dept. Agr., Farmers' Bul. 794, tab. 1, pp. 10-11. 1917.

Bul. 624, U. S. Dept. of Agriculture.

PLATE I.



Fig. 1.—Side Views Showing the Characteristic Texture of the Rind.

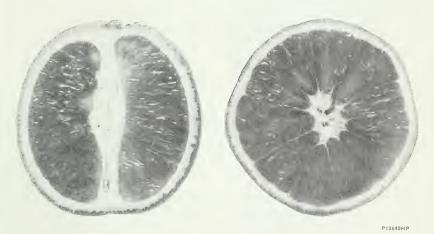
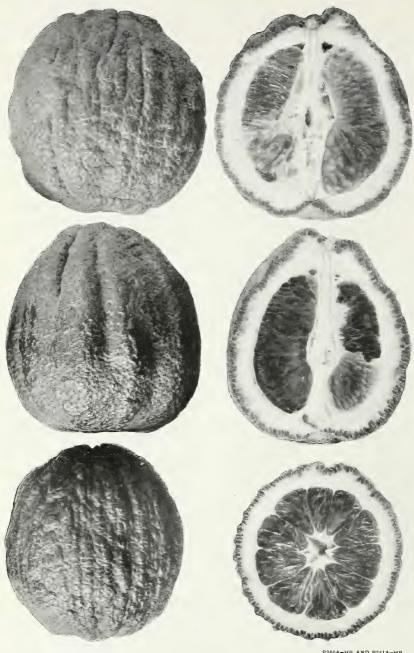


Fig. 2.-Axial and Cross Sections of the Same Fruits.

TYPICAL FRUITS OF THE VALENCIA ORANGE.

(About three-fourths natural size.)



P240A-HP AND P241A-HP

TYPICAL FRUITS OF THE CORRUGATED STRAIN OF THE VALENCIA ORANGE. TWO VIEWS ARE SHOWN OF THREE FRUITS.

(About two-thirds natural size.)



Fig. 1.—Side View of the Fruits, Showing Their Characteristic Cylindrical Shape.



Fig. 2.—Cross and Axial Sections of the Same Fruits.

TYPICAL FRUITS OF THE LONG STRAIN OF THE VALENCIA ORANGE.

(About four-fifths natural size.)





P9122HP

Fig. 1.—Side View, Showing the Shape of the Fruit and Its Characteristic Ribbed Surface.





P9121HP

FIG. 2.-ENDS OF THE SAME FRUITS.





P9123HP

Fig. 3.-Cross Sections of the Same Fruits.

TYPICAL FRUITS OF THE RIBBED STRAIN OF THE VALENCIA ORANGE.

(About nine-tenths natural size.)

CORRUGATED STRAIN.

The trees of the Corrugated strain are not so productive, as a rule, as those of the Valencia strain. They have a drooping habit of growth, and the leaves are usually smaller than those of the Valencia strain and are sharply pointed.

The typical fruits, as shown in Plate II, are oblong or cylindrical; size usually large; texture of skin very rough, corrugated; rind thick; color greenish; rag tough; juice scant, of poor quality and flavor; seeds averaging 2 or 3 per fruit; in fact, these fruits are not worth shipping to eastern markets, but in these investigations they have been included in the standard grade for this variety. This strain, however, is one of the most interesting in the variety for purposes of studying the behavior of bud mutations in citrus fruits.

LONG STRAIN.

The habit of growth and foliage characteristics of the Long strain are similar to those of the Valencia strain, but the trees are less productive.

The fruits, as shown in Plate III, are cylindrical and much longer than those of other strains; size, as measured by cross diameter, small to medium; texture smooth; color bright orange; rag tender; juice abundant, sweet, of good quality; seeds averaging 1 or 2 per fruit. The peculiar shape of these fruits makes them unsuitable for packing and marketing under prevailing conditions. This strain frequently occurs as limb sports in trees of the Valencia strain.

RIBBED STRAIN.

The trees of the Ribbed strain are usually very irregular in production, bearing full crops some seasons, followed by several seasons of very light production. The habit of growth is usually drooping, and the foliage is sparse, the leaves being small and sharply pointed.

The typical fruits, as shown in Plate IV, are globular, sometimes somewhat flattened on both stem and blossom ends; size small; texture coarse; color pale yellow; rind thin to medium; rag tender; juice abundant, inferior in quality and flavor to that of the fruits of the Valencia strain; seeds averaging 2 per fruit. The ribbed character of the rind gives the fruits a striking appearance, but it detracts from their commercial value under prevailing market conditions.

YELLOW STRAIN.

The productiveness of the trees of the Yellow strain is about the same as those of the Ribbed strain, except that they show a tendency to more regularity of annual production. The habit of growth is spreading and drooping. The foliage is of medium density, the leaves being medium in size and sharply pointed.

The typical fruits, as shown in Plate V, are globular; size small; texture very smooth; color deep yellow; rind very thin; rag very tender; juice abundant, very sweet; seeds averaging 1 per fruit. Frequently the skins of these fruits have small spots or streaks of red, as is the case with the fruits of the Yellow strain of the Washington Navel orange. On account of the small size and yellow color of the fruits, they are inferior to fruits of the Valencia strain for commercial purposes under prevailing conditions. These fruits usually ripen about one month earlier than those of the Valencia strain, and for this reason may prove to be of value for some climatic and soil conditions. They are very frequently found as limb sports in trees of the Valencia or other strains.

SMOOTH STRAIN.

The trees of the Smooth strain are much less productive than those of the Valencia strain, and have an upright, spreading habit of growth. The foliage and other tree characteristics are similar to those of trees of the Valencia strain.

The fruits, illustrations of which are shown in Plate VI, are usually somewhat smaller than the fruits of the Valencia strain, but have about the same shape; texture of skin very smooth, resembling in appearance that of fruits of the Smooth strain of the Washington Navel orange; color reddish orange; rind very thin; rag tender; juice abundant, sweet; seeds averaging 2 or 3 per fruit. This strain is promising as a valuable addition to the orange strains in California when isolated and improved by bud selection. It is frequently found as a limb sport in trees of the Valencia strain.

BARREN STRAIN.

The trees of the Barren strain show more than ordinary vegetative vigor, are very unproductive, and have a drooping habit of growth and very finely branched, dense foliage. The leaves are usually small, narrow, and very sharply pointed. One interesting condition of tree behavior in this strain is the tendency to produce an unusually large number of flowers during the blooming period.

The typical fruits occasionally produced by some trees of this strain, as shown in Plate VII, are flattened in shape, usually with a wrinkled appearance around the stem; size small; texture coarse; color yellowish orange; rind very thick; rag excessive, tough; juice scant, of very inferior quality; seeds averaging 1 or 2 per fruit. On account of its low production and the inferior commercial quality of its fruits, this strain is absolutely worthless. It is occasionally found as a limb sport in trees of the Valencia strain.

ROUGH STRAIN.

The trees of the Rough strain show more than ordinarily vigorous vegetative growth, with a tendency toward the production of a large number of suckers or abnormal branches, and bear smaller crops than trees of the Valencia strain. The habit of growth is usually upright and the foliage dense with large leaves. The large proportion of trees of this strain found in some Valencia orchards is probably due to the use of sucker growth in propagating the trees.

The typical fruits, as shown in Plate VIII, are globular; size large; texture coarse and rough; color yellowish orange; rind thick; rag tough; juice medium in quantity and quality; seeds averaging 2 or 3 per fruit. On account of the inferior appearance of these fruits they are of much less commercial value than those of the Valencia strain. They are occasionally found as limb sports in trees of the Valencia strain.

SPORTING STRAIN.

The trees of the Sporting strain are very variable in habit of growth and production, are usually of more than ordinarily vigorous vegetative growth, and have rather dense foliage. The leaves are extremely variable in size and shape.

The fruits, examples of which are shown in Plate IX, vary in a manner similar to the tree characteristics and frequently include examples of all of the observed strains of the variety and an unusual number of other forms, such as those showing raised or sunken sections, or both, sections of different strains of the Valencia oranges, peculiar ridges or depressions, and abnormal shapes. Usually but few fruits of the Valencia strain are borne by these trees, and on the whole, their crops are of very inferior value from a commercial standpoint.

FLAT STRAIN.

The trees of the Flat strain are comparatively unproductive, with an erect habit of growth and sparse foliage. The leaves are usually

small and sharply pointed.

The typical fruits of this strain, as shown in Plate X, are distinctly flattened at both the stem and blossom ends, giving them a very characteristic appearance; size medium; texture coarse; color yellowish orange; rind thick; juice scant, of inferior quality; seeds averaging about 3 per fruit. On account of their shape, these fruits are not suitable for packing under prevailing conditions of marketing. This strain is frequently found as limb sports in trees of the Valencia strain.

NAVEL STRAIN.

The trees of the Navel strain have habits of growth and production similar to those of the Valencia strain. The foliage is usually rather dense; the leaves are small and rather pointed in shape.

The typical fruits, as shown in Plate XI, resemble the fruits of the Valencia strain in shape, size, and color, but differ from them in having a smoother texture of skin, thinner rind, more acid juice, fewer seeds, and a small, often rudimentary navel. This strain occurs occasionally as individual fruit and limb sports in trees of the Valencia strain. It has been isolated in commercial propagation and is grown to a limited extent under the name Navelencia orange. This strain is especially interesting from the fact that there is a possibility of isolating from it by bud selection a seedless strain of the Valencia variety.

WILLOW-LEAF STRAIN.

The trees of the Willow-Leaf strain have spreading and drooping habits of growth, very narrow, willowlike leaves, and produce infrequent, light crops of fruit.

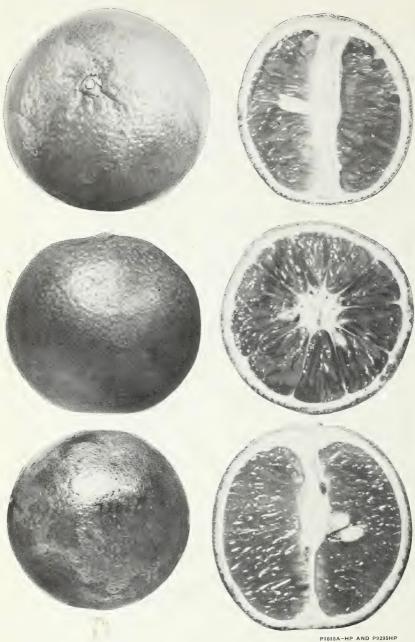
The typical fruits, as shown in Plate XII, are somewhat flattened; size usually small; color yellowish; texture of skin very coarse; rind thick, ridged, and uneven; rag coarse; juice scant, of poor quality; seeds averaging about 2 per fruit. This strain, while one of the most interesting bud variations found in this variety, is absolutely worthless for commercial purposes.

INDIVIDUAL VARIATIONS OF FRUITS.

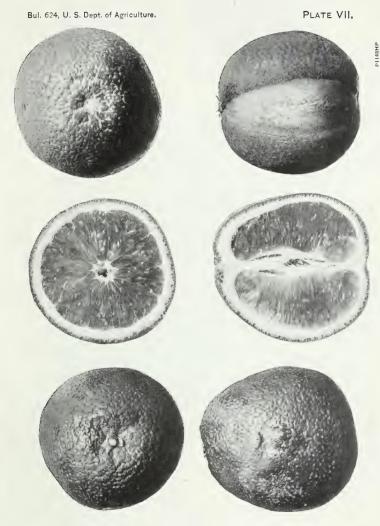
The individual fruit variations found in trees of many of the Valencia orange strains are of fundamental importance in considering the origin of the various strains and their widespread distribution in young orchards. Under normal conditions a twig originating as a bud variation and bearing only a single variable fruit will in a few years develop into a large branch bearing the same character of fruit. In securing bud wood for propagation according to the methods which have prevailed in the past, no thought has been given to the possible occurrence in the trees of branches bearing fruits of variable strains, and as a result among trees so propagated there is usually found a considerable proportion of variable ones. On account of this previous lack of knowledge of the existence of variable strains, the percentage of such variable-strain trees in the population of any locality has been greatly increased with each bud generation. This fact is one of the most important reasons for securing individual-tree performance records and using such records as guides in the selection of trees from which to obtain bud wood for propagation.



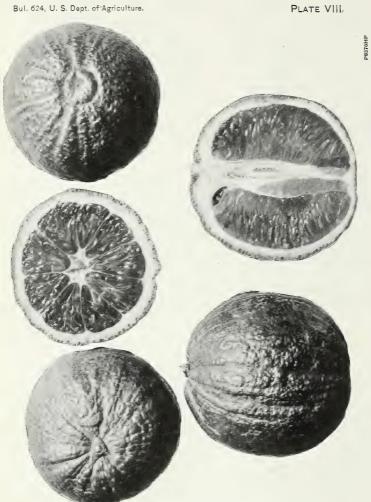
TYPICAL FRUITS OF THE YELLOW STRAIN OF THE VALENCIA ORANGE, SHOWING ITS SHAPE, THE THICKNESS AND TEXTURE OF THE RIND, AND OTHER CHARACTERISTICS. (About three-fourths natural size.)



Typical Fruits of the Smooth Strain of the Valencia Orange, $({\rm About\ four\mbox{-}} fifth s\ natural\ size.)$

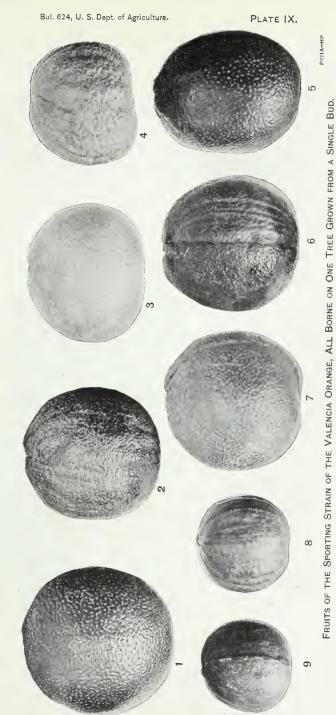


TYPICAL FRUITS OF THE BARREN STRAIN OF THE VALENCIA ORANGE, SHOWING THE CHARACTERISTIC COARSE TEXTURE OF THE RIND AND ONE VARIABLE FRUIT. (About three-fifths natural size.)



TYPICAL FRUITS OF THE ROUGH STRAIN OF THE VALENCIA ORANGE.

(About three-fifths natural size.)



1, Valencia strain; 2, Rough strain; 3, Flat strain; 4, Flat strain, corrugated; 5, Long strain; 6, Sunken section; 7, Raised section; 8, Ribbed strain; 9, Ridged section. (One-half natural size.)

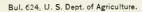
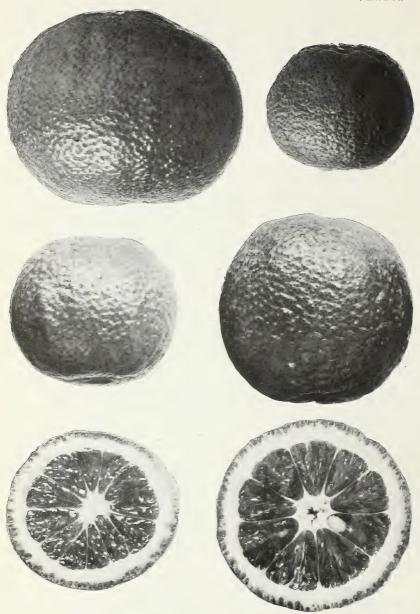


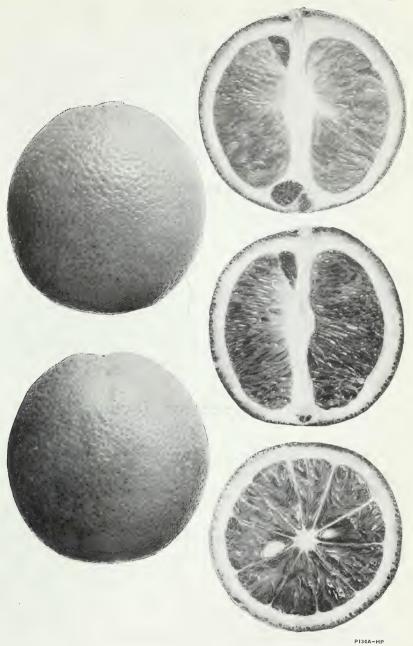
PLATE X.



P238A-HP, P1196A-HP, AND P1199A-HP

TYPICAL FRUITS OF THE FLAT STRAIN OF THE VALENCIA ORANGE.

(About four-fifths natural size.)



Typical Fruits of the Navel Strain of the Valencia Orange.
(About four-fifths natural size.)

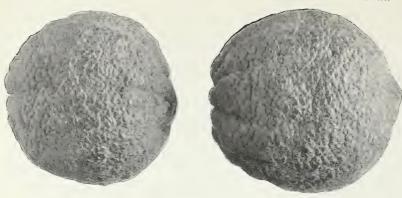


Fig. 1.—Side Views, Showing the Coarse, Rough Texture of the Rind.



FIG. 2.-END VIEWS OF THE SAME FRUITS.



Fig. 3.-Cross Sections of the Same Fruits.

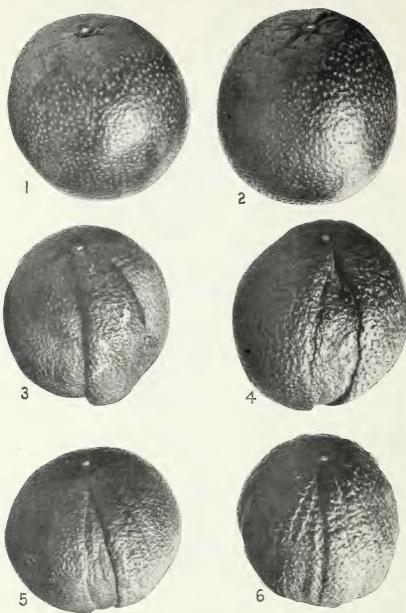
TYPICAL FRUITS OF THE WILLOW-LEAF STRAIN OF THE VALENCIA ORANGE.

(About two-thirds natural size.)



TYPICAL FRUITS OF THE VALENCIA AND ROUGH STRAINS OF THE VALENCIA ORANGE BORNE ON ONE TREE GROWN FROM A SINGLE BUD. PII74A-HP

The Rough-strain fruits were produced on a sporting limb, the remainder of the fruits on the tree being typical Valencia strain in character. (About three-fifths natural size.)



Minor Variations of Fruits Borne on a Tree of the Valençia Strain Grown from a Single Bud.

1 and 2, Valencia strain; 3, Raised section; 4, Sunken section; 5, Raised and Sunken sections; 6, Rough strain. (About seven-tenths natural size.)

Fruits arising from bud variations may occur as individual fruits, or collectively on a single branch, or on several branches of a single tree. Plate XIII shows fruits of the Rough strain which were borne on a sporting limb in a Valencia strain tree. The degree of fruit variability considered in this connection, while often of importance commercially, is usually not sufficient for varietal distinction. It may be illustrated by the variability of fruits in the Washington Navel orange where the variations under observation are well marked and commercially distinct but all of the fruits possess the characteristic navel. These strains possess characteristics which have been found to be capable of isolation through bud selection in propagation. The differences in the characteristics of the fruit variations in some of the different strains are of an importance from the commercial standpoint almost equal to those which differentiate the horticultural varieties of the citrus fruits.

The number of major fruit variations borne by individual Valencia trees in the performance-record plats differs greatly. A few trees have been found in the performance-record plats without any apparent or marked variations in fruits other than the usual modifications of size, shape, texture of rind, color, or quality which are probably due to the influence of environmental conditions. In some trees one or only a few variable fruits have been found. In others, several fruits of each of the 12 distinct strains have been found borne by one tree grown from a single bud. In some trees one of the main branches occasionally is found to bear fruit of several distinct strains, but as a rule single large off-type branches bear fruits of the same general character.

MINOR VARIATIONS OF FRUITS.

A great many minor variations have been found from year to year in some of the performance-record trees. A single fruit often shows sections or segments characteristic of two or more distinct strains of the variety. Others show large raised or sunken sections, or both, in the same fruit, examples of which are shown in Plate XIV. Many abnormal fruits, particularly in shape, have been found and described. Twin fruits, and those showing several divisions, each a complete orange in itself, have been found occasionally.

A careful study of these differences arising from bud variations is being made with the hope that the results will throw some light upon the problems of heredity in citrus varieties.

LESSONS TAUGHT BY THESE INVESTIGATIONS.

The tables and diagrams presented herewith are all prepared from records covering the 4-year period, 1912 to 1915, inclusive, secured from 105 trees in a grove which was planted in the fall of 1903. In

this plat there are typical trees of 8 of the 12 most important strains of the Valencia variety and 3 of the minor strains, as follows: 75 Valencia strain trees; 8 Unproductive; 7 Corrugated; 3 Sporting; 3 Coarse; 2 Rough; 2 Smooth; 2 Barren; 1 Long; 1 Yellow; and 1 Small Yellow. Examples of the other 4 important strains and several minor variations occur as bud and limb sports in many of the trees. Although this plat is not an example of extreme variation of strain in established orchards, it is interesting to note that only 71 per cent of the trees in it are of the Valencia strain. Groves have been observed which were found to contain as large a percentage, and in some extreme cases more than this proportion, of trees other than those of the Valencia strain.

The accompanying performance records, descriptions, and illustrations only partially present the characteristics of the various strains. The real differences of the trees and fruits must be seen and studied personally before they can be fully appreciated and their importance in commercial fruit growing understood. For this same reason, the selection of trees from which to secure bud wood for propagation should not be made on the basis of the performance records of the trees alone. It is most desirable that the final choice be made in the orchards with the performance records in hand by someone who through close study and observation of the trees themselves has gained an intimate knowledge of the interrelation of tree characteristics and crop production.

PRESENTATION OF DATA.

The complete 4-year performance records of the 105 trees on which comparable data have been secured are presented in Table I. This shows the production by weight and number of fruit of each grade and size for each year and the annual average production for the 4-year period. The basis of ranking the trees in this table is the average annual total crop of each tree, expressed in pounds and ounces, without regard to the grade, quality, or uniformity of the fruit. Hence, the position of any particular tree in this table is not necessarily a true index of what its relative position would be if the classification were made on the basis of the commercial value of its fruit. The impossibility of making an accurate classification of a large number of trees on the basis of the comparative quality of the fruits and the desirability of the individual trees is the reason for the adoption of the weight of the average annual crop as a basis in preparing this table.

(The weights of annual production are expressed in pounds and onnes, but the fractional averages are expressed decimally in pounds. The fruits of the Standard grade from the trees of the Corrugated and Rough strains were not sized in the years 1912 and 1913.] TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive.

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io i	number per fruit	A Yetage sbees	0 1.67 3.67 5.00	2.59	1.33 1.33 4.67 5.67	3.25	1.67 2.67 0 3.33	1 92	1.00 1.89 2.78
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*.	80 and larger.	.ydgisW.	Lbs.oz. 0 0 0 0 0 0 0 0	0	0000	0			000
		Number.	2000	-	0000	0			7000
	96	Weight.	Lbs. oz. 3 8 0 0 0 0	0.9	0000	0	- 1 1 1		×00
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	112	Weight.	Lbs.0z.	0.6	0,000	2.5			9 12 0 0 8 0 8
		Number.	H000	0.3	010	8.0			mo-
	126	Weight.	Lbs.oz. 0 8 0 0 0 0	0.1	1 1 0 0 0 10 0 0	0.4			1 0 0 0 10
		Number.	75 A C	17.	1000	6			25.00
	150	Weight.	Lbs. oz. 28 1 2 7 2 1 2 6 6	8.7	15 3 0 0 2 11 0 8	4.8			43 4 12 4 12
		Number.	69 7 17 30	31	8000	7			92 20
Sizes.	176	Teight.	Lbs.oz. 31 12 3 2 8 10 12 13	14.1	11 0 0 0 1 7 0 0	3.1			42 12 3 2 10 1
		Number.	109 45 37 133	83	999	12			145 45 43
	200	Weight.	Lbs.oz. 45 1 17 14 16 14 52 11	33.1	15 11 0 0 2 8 2 6	5.1			60 12 17 14 19 6
	1	Number.	38 40 95 135	11	25.00 52	12			59 45 103
	216	Weight.	Lbs.oz. 13 15 13 15 38 12 45 8	28.0	2 14 2 14 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	4.4			21 15 15 11 41 10
		Number.	48 133 133 133	113	25.41	$\frac{\infty}{2}$:	61 147 152
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	ē.	Number.	14 177- 168 87	112	101 32 43	45			19 278 200
	288 and smaller.	.³dgis₩	Lbs.oz. 3 12 43 10 50 1 23 3	30.2	21 7 21 6 8 2 10 5	10.8			250 20 20 20 20 20 20
		Number.	343 407 529	434	120 120 74 96	108	25.24	30	508 585 545
	Total.	Weight.	Lbs. oz. 144 10 122 5 165 9 176 11	152.3	61 2 27 9 25 13 27 11	36.3	9 8 8 10 8 8 10 8 8 10 8 10 8 10 8 10 8	5.3	218 4 155 4 192 14
	Rank, tree number, strain,	Braue, and year.	tree No. 23-87-1, Valencia Strain: Orchard grade— 1913 1914 1914	Average	Standard grade— 1912 1913 1914 1915	A verage	Cull fruits— 1912 1913 1914 1915	Average	Total crop— 1912——————————————————————————————————

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

pjq:	of varia	TədmuN Tî	21	20						
ìo	number per fruit.	Average seeds	4.67	2.58	0 3.00 4.67 4.00	2.92	1.33 2.00 6.00	3.43	0 4.67 1.67 3.67	2.50
	d r.	Number.	0	0	0000	0	0000	0		
	80 and larger.	Weight.	Lbs. oz 0 0	0	0000	0	0000	0		
		Number.	0	-	0000	33	0000	0		
	96	Weight.	$Lbs.\ oz. \\ 0 \ \ 0$	0.9	6 13 0 0 0 0	1.7	0000	0		
		Number.	0	70	2000	-	0200	5		
	112	.tdgis7//	Lbs. oz. 0 0	3.1	2 15 0 0 0 0 0 0	0.7	111 0 0 1 1 0 0	3.1		
		Number.	0	-	4000	-	0108	0.8		
	126	Teight.	Lbs. oz. 0 0	0.5	0000	0.5	1000	0.4		
		Number.	9	26	31 0 10 2	Ξ	25 0 0	6		;
	150	Weight.	Lbs. oz. 2 14	13.3	15 15 0 0 5 11 1 0	5.7	13 10 0 0 6 2 0 0	4.9		
		Number.	30	37	27 20 20 7	15	151	œ		
Sizes.	176	Weight.	Lbs. oz. 12 13	17.2	12 9 2 4 10 4 3 0	7.0	7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3.7		
		Number.	145	95	29 28 37 100	49	21 1 16 3	10		
	200	Weight.	Lbs. oz. 55 1	38.0	12 2 10 11 16 11 35 15	18.9	9 2 0 6 6 10 1 4	4.3		
		Number.	150	68	10 35 64 175	17	£ ∞ £ 0	17		
	216	.tdgie77	Lbs. oz. 50 10	32.5	3 10 11 15 26 1 55 11	24.3	8 12 2 13 5 0 3 7	5.0		- :
		Number.	164	131	113 117 144	91	24 24 55	26		
	250	Weight.	Lbs. oz. 49 8	42.4	23.5 × 22 41.5 × 4	28.5	2 12 5 2 8 6 16 8	8.2		
	et s.:	Number.	130	157	6 110 114	131	141 42 161	87		
	288 and smaller.		8 3	က	∞ O w rċ	20	1725	1		
,	28	Weight.	Lbs. 33	40	1 70 34 27	33	30 11 37	20		
	-:	Number.	650	572	135 479 332 542	372	118 168 125 229	160	35 52 13 23	31
	Total.	.tdgis77	Lbs. oz. 209 0	193.8	61 13 130 6 126 2 164 4	120.6	55 1 38 15 46 7 58 14	49.8	16 12 6 15 2 4 5 1	7.8
	Rank, tree number, strain, grade, and year.		1, tree No. 23-87-1, Valencia strain—Continued. Total crop—Continued.	Average	2, tree No. 23–86–1, Valencia strain: Ordard grade— 1912. 1913. 1914.	Average	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912. 1913. 1914. 1914.	Average

98 52 52	41	::::	;		;	::::	:	-1000	8		:
3. 22 3. 52 4. 59	2.95		3.33	1.67	4.50	. 33 2.33 3.97	2.67		3.45	2.67 7.00 6.33	5.07
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0000	0	0000	0	0000	0			0000	0	0000	0
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000	1.7	8000	1.3	0000	0			8000	1.3	4000	0.3
9000	2	2000	5	0000	9			10000		1000	22
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73.6 42	23	946	13	11 80	6			22 98	22	54 5	17
19 11 2 12 17 6 13 0	10.7	20 14 0 8 1 7 1 4	6.0	14 9 0 7 1 7 0 0	4.1			35 7 0 15 2 14 1 4	10.1	24 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	7.4
29 29 103	59	51 44 36 67	20	35.08.0	12			86 44 73	62	63 55 55	37
4'H10'0	3.2	12 1 41	19.8	111 0 0 4	5.1			2722	24.9	12 12 4	14.4
322	85 23	5 21 62 17 86 16 112 24	66 1	21 14 13 0 9 3 28 2	18		:	26 35 75 17 95 19 40 27	84 2	4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	
33 2 43 2 185	80		9 6	111 2 2 6 2 2 2	2 1		:	9 2 8 9 15 14 14 14 14 14 14 14 14 14 14 14 14 14	1 8	24 55 55 57 8 96	3 57
12 6 14 12 31 1 59 2	29.	1 14 21 15 34 6 37 9	23.	17 1 2 3	9.			9 26 37 46 1	30.	8 14 17 15 22 0 32 3	20.
21 134 115 199	117	124 125 130	96	28 119 85	35		:	12 152 144 215	131	17 125 115 106	91
6 14 40 10 41 10 57 13	36.7	1 11 38 15 44 11 39 2	31.2	24 6 24 6	10.3			47 2 51 0 63 8	41.4	5 11 39 5 39 10 32 4	30.4
11 435 152 275	218	1118 120 87	82	135 40 70	63			253 160 157	145	189 287 75	138
2 13 5 10 5 0	53.4	0 4 30 13 23 9	22.7	2 10 30 0 10 8 17 6	15.1			2 14 60 13 46 12 40 15	37.8	0 4 47 10 81 3 20 1	37.3
288 699 100 470 45 794 65	563	228 353 372 372 372	339	169 177 81 189	154	33 61 19 16	32	430 591 606 472 4006	525	252 394 466 839 239	363
10 20 44 13 44 17	€2	1447	6	15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	9.	13 14 14	5.5	113 6 6 4 5 5 6	0	15 2 2 2 2 2 3 4 5 3 2	0
133 176 174 228	178	111 111 133 127	120.	79 43 25 53	. 50	11 4 8 6 2	.9	205 159 163 183	178.	114 115 146 107	121.
Total crop————————————————————————————————————	Average	strain: Orbard grade— 1912. 1913.	Average	Standard grade— 1912 1913 1914	Average	Cull fruits— 1912. 1913. 1914. 1915.	Average	Total crop— 1912 1913 1914 1915	Average	4, tree No. 23-91-1, Valencia strain: Orchan: Orchan: 1912 1913 1914 1915	Average
14	14648°—18—Bull. 624——2										

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

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	number per fruit	Aretage seeds	0.67 4.67 3.67 7.00	4.02	1.67 4.00 2.33 7.67	3.92	1.67 4.33 7.00	4.33	.33 5.67 4.67	3.67
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	80 and larger.	.theight.	Lbs.oz. 0 0 0 0 0 0 0 0	0 .			0000	0	0000	0
		Number.	0000	0			8000	0.5	8000	0.8
	96	.Yeight.	Lbs.02. 0 0 0 0 0 0 0 0	0			4000	0.3	0000	0.5
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	126	Weight.	Lbs.02. 3 5 0 0 0 0 0 0	0.8			0000	1.8	0008	0.5
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	150	Weight.	Lbs.oz. 23 15 0 0 0 8 0 0	6.1			56 0 0 0 0 0 0 0 0 0 0	14.3	21 6 0 0 0 0 0 15	5.6
		Zumber.	0000	Ξ			46 2 1 8	22	44 1 13 16	16
Sizes.	176	Weight.	Lbs.oz. 18 6 0 0 0 0 0 14	8.8			42 14 2 4 0 8 3 6	12.3	19 10 0 6 1 6 6 15	7.1
00		Zumber.	04084	12			25.9 25.9	49	69 9 121	55
	200	.treight.	Lbs.oz. 16 12 0 0 1 3 1 8	4.9			42 8 8 13 15 12 12 12	19.3	27 3 3 6 9 12 44 13	21.3
		Zumber.	22 3 36	14			188	71	35 31 90 157	78
	216	.Veight.	Lbs.oz. 9 9 0 14 1 0 7 6	4.7			18 7 18 13 23 0 39 9	25.0	12 6 10 11 36 0 51 3	27.6
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	250	.thgia'//	Lbs.oz. 5 12 3 7 5 4 5 4	8.6			111 7 42 12 44 14 52 4	37.8	10 8 832 8 34 1	35.0
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	288 and smaller.		12 7 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	00			10 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5	13 6	
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* ****	Total,	.tdgis7/	Lbs.oz. 83 6 37 7 28 6 42 9	47.9	15 10 5 0 3 6 3 2	6.8	213 3 158 6 177 13 153 7	175.7	106 15 109 12 156 4 144 1	129.3
Rank, tree number, strain, grade, and year.		4, tree No. 23-91-1, Valencia strain—Continued. Straidard grade— 1912 1913 1914 1915	A verage	Cull fruits— 1912 1913 1913 1914	Average	Total crop— 1912 1913 1913 1914	Average	5, tree No. 23-80-4, Valencia Strain: Orchard grade— 1912: 1913: 1915.	Average	

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00 0 61	×			79 9 31 135	63	42 34 43 191	× 2	9 12 24 24	12		
4 3 0 0 3 14. 5 8	3.4			31 6 3 6 13 10 50 5	24.7	17 8 13 0 19 14 70 0	30.1	3 15 0 0 6 12 9 9	5.1		
14 2 2 46	16			49 33 92 203	94	113 17 18 98	58	7.2718	19		
21112	5.8			89111	3.3	113	7 . (11100	8.9		
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11 100 100	32			43 1114 186 217	140	7 149 54 50	65	121	43		:
3 5 2 3 3 12 31 12 31 12 31 12	10.3			13 13 34 11 66 13 65 13	45.3	20 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	20.5	3 4 3 15 9 6 37 10	13.5		
10 129 17 82	09			30 393 165 106	174	1 206 56 15	70	93 93 108	59		
13 4 2 13	13.5			15 15 14 14 15	43.6	0 4 7 10 3 12	18.0	44 401	14.0		
0 7 7 25 4 1 25 1 25		227	23	448.6 050.2 72		8 50 0 8 177 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3		88 18 0 88 6 25 8 25		34 70 22 23	2
80 1137 254 254	123		5 2	1 364 6 624 6 699	9 544	0 205 8 442 3 229 1 398	4 319	100 100 300 300	5 145		35
34 .0 23 .0 13 .8 80 15	39.1	11 1 1 1 1 2 2	55	152 4 145 5 171 10 226 5	173.9	80228	113.4	26 14 23 8 38 13 92 15	45. 5	15 14 5 8 2 12 3 12	7.0
Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912 1913 1914 1915	Average	strain: Orchard grade— Orchard grade— 1912 1914 1915	Average	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1914	Average

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1913 to 1915, inclusive—Con.

spje	of vari	Number	29 23 24 24 25	46		;		:		
ìo	number per fruit.		1.22 3.56 2.78 4.78	3.09	.33 .67 1.67 3.33	1.50	4.00 5.00	3.43	1.67 3.00 1.67 3.00	2.34
	- T	Number.	0000	0	0000	0	0000	0		
	80 and larger.	Weight.	Lbs.oz. 0 0 0 0 0 0	0	0000	0	0000	0		
		Number.	0000	0.5	H000.	0.3	0000	0		
	96.	vtdgisW	Lbs.oz. 1 4 0 0 0 0 0 0	0.3	0 0 0 0 0 0	0.2	0000	0		
		Number.	250	9	1000	65	4000	-		
	112	Weight.	Lbs.oz. 14 11 0 0 0 11 0 0	3.8	6 0 0 0 0 0 0 0	1.6	2000	0.6		
		Number.	7.00	ಣ	000	က	4000	0.3	-: : : :	
	126	.tdgisW	Lbs.oz. 4 0 0 0 0 0 0 8	1.1	6 14 0 0 0 0 0 0	1.7	6000	0.1	1 1 1 1	
		Number.	23 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	23	65 1 0 13	20	0000	2		
d	150	Weight.	Lbs.oz. 42 9 0 7 1 9 3 4	12.0	33 0 8 0 0 5 0	10.0	0 0 0 0 0 0 0 0 0	1.2	0 5 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	
		Number.	55 3 16 41	29	64	25	2012	4		
Sizes.	176	Weight.	Lbs.oz. 25 7 1 6 8 3 17 4	13.1	29 6 3 0 11 3 8	11.5	2002	1.3		
		Number.	51 24 58 215	06	62 45 27 177	78	14 1 20 20	13		
	200	Weight.	Lbs.oz. 21 7 13 0 26 10 79 9	35.2	25 6 17 10 12 0 69 1	31.0	5 12 0 6 4 0 10 5	5.1		
		Number.	20 51 146	92	20 75 93	59	r-8064	18		
	216	Weight.	Lbs.oz. 7 8 17 12 36 8 48 3	27.5	7 4 17 2 30 6 32 6	21.8	2 9 2 9 3 4 17 2	6.4		
		Number.	17 162 80 80 171	108	26 137 93 75	83	14 14 66	22		
	250	Weight	Lbs.oz. 5 8 49 6 29 9 51 14	34.1	8 4 43 2 33 10 23 9	27.1	0 10 1 .7 4 10 19 11	9.9		
	P i	Number.	299 299 123	129	13 181 87 34	79	112 112 21 33	45		
	288 and smaller.	Weight.	Lbs.oz. 2 8 69 1 25 14 30 6	32.0	3 8 46 14 26 8 19 5	24.0	25 4 25 4 7 12	10.4		
		Number.	303 620 341 726	498	274 420 287 417	350	54 126 54 179	103	22122	37
	Total.	.tdgisW	Lbs. oz. 140 12 156 8 131 12 234 12	165.9	120 12 128 4 105 0 161 13	129.0	22 0 29 10 17 12 57 3	31.6	7 2 10 2 1 4 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	5.3
	Rank, tree number, strain,	Carried Carried	strain—Continued. Total crop— 1912. 1913.	Average	strain: Orchard grade— 1912. 1913. 1914.	Average	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1915	Average

12 16 46 30	26		:		:			0000	8		
2.56 3.78 3.78	2.42	0 2.33 3.67	2.50	1.00 5.00 5.33	4.25	52.33	3.58	4. 55 4. 00 4. 78	3.44	1.33 3.67 5.67	3.25
0000	0	0000	0	0000	0		:	0000	0	0000	0
0000	0	0000	0	0000	0			0000	0	0000	0
1000	63	130000000000000000000000000000000000000	က	0000	0			2000	က	10000	
11000	0.	1000	7	0000	0			1000	62	4000	00
0.000	0.2	, 8000	2.	0000				8000	2.	8000	0.
15000	4	. 25000	9	8000	22			150 00 00	=	37	6
8 14 0 0 0 0 0 0	2.2	14 12 0 0 0 0 0 0	3.7	12 15 0 0 0 0 0 0	3.2			27 11 0 0 0 0 0 0	6.9	25 0 0 0 0 0 0	5.6
13	က	2002	4	8000	8.0		:	15002	4	11000	3
000	1.9	6 11 0 0 0 0 1 2	2.0	11 11 0 0 0 0	0.4			8 0 0 0 1 2 2	2.4	0000	1.6
74 1 0 13	53	73 3 15	23	355	6			108 0 15	32	72	21
37 10 0 8 0 0 6 5	11.1	36 8 1 7 0 0 6 12	11.2	188 4 0 0 0 0 0 0	4.6			54 12 1 7 0 0 6 12	15.7	38 12 0 15 0 0 0 0 2 14	10.6
69 69 80	28	51 9 9 46	29	24 0 0 11 4	1~			75 9 10 50	36	26 3 29	15
31 11 3 0 3 0 13 8	12.8	22 15 3 12 4 10 19 12	12.8	11 6 0 0 0 8 1 12	3.5			34 5 3 12 5 2 21 8	16.2	11 14 0 7 1 9 12 8	6, 6
76 46 36 203	06	43 45 203	08	12 c 4 ∞	10			70 47 - 32 211	90	28 51 112 191	11
31 2 18 0 16 0 79 6	36.1	17 6 17 3 12 10 76 13	31.0	111 5 0 111 1 122 3 2	4.2			28 11 17 14 14 6 79 15	34.7	11 13 19 8 5 5 71 3	27.0
27 57 84 142	28	8 45 79 96	22	11 4 9 8	12			19 49 85 124	20	11 52 63 137	99
9 13 19 11 33 10 49 8	28.1	2 12 15 9 31 11 32 10	20.7	4 5 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	4.3			6 14 16 15 33 13 42 5	25.0	4 0 18 2 25 7 44 11	23.1
28 142 107 141	105	92 116 50	29	0 112 123 34	16			105 128 84 84	83	134 124 74	84
8 14 8 14 38 4 43 4	33.7	2 15 28 2 44 3 15 11	22.0	2 13 3 13 10 8	5.1			5 0 31 15 45 1 26 3	27.0	1 5 441 15 21 8	27.5
293 108 67	123	148 126 14 14	7.5	4883	33			231 163 21	105	2 162 191 38	86
6 10 6 10 33 14 27 1	34.4	4 1 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	19.2	1 2 17 5 9 8 1 12	7.4			1 6 51 6 48 0 5 13	26.6	0 10 38 11 58 4 9 14	26.9
349 627 352 300 200	490	235 3358 358 358	340	130 102 60 81	93	24 86 7	31	389 530 514 514	465	199 402 393 475	367
150 1 164 8 124 13 224 4	165.9	112 14 100 12 128 10 156 13	124.8	62 14 23 3 17 12 26 13	32.7	10 i2 7 7 1 5 1 12	5.3	186 8 130 12 147 11 185 6	162.6	100 4 119 10 135 11 162 10	129.5
Total crop— 1912 1913 1914 1915	Average	8, tree No. 22-90-8, Valencia Strain: Orchard grade— 1912 1913 1914	Average	Standard grade————————————————————————————————————	Average	Cull fruits— 1912. 1913. 1914. 1914.	Average	Total crop— 1912. 1913. 1914.	Average	9, tree No. 23-86-10, Valencia Strain: Orchard grade— 1912 1913 1914	Average

TABLE 1.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive--Con.

əldsi	of var.	19dmuN uri		:			0091	23		
ìo	number tiuri 199	Average seeds	0.67 3.33 3.33 7.00	3.58	1.67 4.00 3.67 7.67	4.25	1.22 3.67 3.11 6.78	3.69	1.33 3.67 7.33	4.44
	p	Number.	0000	0			0000	0	0000	0
	80 and larger.	Weight.	Lbs.oz. 0 0 0 0 0 0 0 0	0			0000	0	0000	0
		Number.	0000	0			10.000	-	0000	0.5
	96	Weight.	Lbs.oz. 0 0 0 0 0 0 0 0 0 0	0			4000	0.8	4000 000	0.3
		Number.	01-00	ಣ			1000	12	8000	-
	112	Weight.	Lbs.oz. 6 2 0 10 0 0 0 0	1.7			28 7 0 10 0 0 0 0	7.3	1 12 0 0 0 0 0 0	0.4
		Number.	8000	0.5			E000	3	8008	1
	126	Weight.	Lbs.oz. 1 2 0 0 0 0 0 0 0	0.3			7 0 0 0	1.9	1.0 0 0 1 0 1 1	0.5
		Number.	11800	4			00 00	24	11333	1-
	150	Weight.	Lbs.oz. 5 13 1 10 0 0 0 0	1.9	1 1 0 0		44 2 9 0 0 2 14	12.5	6 1 2 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	3.5
		Number.	16	4			42 1 30	13	28 4 4 40	20
Sizes.	176	Weight.	Lbs.oz. 7 13 0 0 0 0 0 0	1.1			19 11 0 7 1 9 12 15	8.7	12 5 3 11 2 0 17 2	oc oc
01		Number.	150	10			48 51 13 194	22	72 28 17 194	1- 20
	.200	Weight.	Cbs.oz. 6 8 0 0 0 7 1 4	2.1			18 5 19 8 5 12 72 7	29.0	28 1 7 10 15 7 10	29.9
		Number.	010 4 31	00			21 55 67 152	74-	50 38 48 110	62
	216	Weight.	Lbs.oz. 3 13 1 1 1 9 5 8	3.0	1 1 1 1	-	7 13 19 3 27 0 50 3	26.0	17 11 13 8 19 14 36 6	21.9
		Number.	£1113	17		:	7 145 134 116	101	67 134 74 39	2
	250	Weight.	Lbs.oz. 1 0 3 4 3 7 13 2	5.2			2 45 48 9 34 10	32.7	20 15 43 1 11 9	25.8
	ъ.:	Number.	1 96 37 46	45		:	258 228 84 84	143	43 258 95 12	102
	288 and smaller.	Weight.	Lbs.oz. 0 5 19 4 9 13 12 0	10.3			0 15 57 15 68 1 21 14	37.2	10 15 63 6 30 0 3 1	26.8
		Number.	68 1114 52 107	85	2525	29	293 585 457 592	482	280 469 240 408	349
	Total.	Weight.	25 13 15 4 32 5	26.5	12 22 20 2 20 20	5.4	145 1 150 8 152 15 197 1	161.4	100 2 136 1 88 1 147 9	118.0
	Rank, tree number, strain,		9, tree No. 23-86-10, Valencia Strain—Continued. Standard grade— 1912. 1913. 1914.	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912 1913 1914 1914	Average	10, tree No. 23-86-5, Valencia Strain: Orchard grade— 1912. 1913. 1914.	Average

; ; ; ;	;		;	46 20 34	28			::::	1 :		:
1.00 2.33 5.00 6.67	3.75	. 33 3. 67 7. 33	3.67	. 89 3. 22 4. 56 7. 11	3.95	0 2.67 5.33	2.50	1.33 4.33 4.33	3.42	0 3.00 5.67	3.33
0000	0		1	0000	0	0000	0	0000	0		
0000	0			0000	0	0000	0	0000	0		
0000	0			8000	0.5	1-000	2	0000	0		
0000	0			10 00 00 00 00	0.3	4 11 0 0 0 0 0 0	1.2	0000	0		
4000	-		·	10000	65	6000	2	4000	4		
#000 8000	1.0			5 15 0 0 0 0 0 0	1.5	75 0 0 0 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.4		
H 0 0.0	0.3			8008	-	00000	4	8000	0.5		
8000	0.1			1001	9.0	20 TI	2.0	000	0.3		
112	4			12333	11	1000	14	1000	00		:
7 9 0 0 7	1.9			12 10 1 10 1 10 5 13	5.4	24 12 0 0 0 9 3 5	7.2	20 00 00 80 80 80	4.0		
41-126	52			42 9 6 43 6	25	113 38	25	25 0 10 10	10		
0 8 6 1 6 6 1	2.3			11 80 8	11.1	98 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	11.6	10 41	4.5		
32 6	20			18 8 4 8 18 8 18		22 24 20 20 20 10 10	-	20 11 18 18 18 4	12		
	13			104	90	15 15 13 132	59		-		
13 I 0 0 1 12 5 8	5.1			41 2 10 15 9 6 78 8	35.0	18 2 5 15 20 4 50 12	23.8	8 0 11 8 8 4 7	4.9		
34 5 9 24	18			84 43 57 134	80	11 31 79 109	58	12 0 4 4 46	16		
12 2 1 10 3 10 8 10	6.5			29 13 15 2 23 8 45 0	28.4	3 14 10 15 32 6 35 9	20:7	4 9 0 0 1 8 16 11	5.7		
28 111 22 34	24		:	95 145 96 73	102	18 104 97 49	29	44 16 72	25		
9. 7 3.5 7.13 11. 2	7.9			30 6 46 6 35 5 22 11	33.7	5 12 35 2 35 15 14 3	22.0	1 15 5 5 5 9	7.8		
25 39 39	48		;	67 356 124 51	150	310 79 15	101	0 25 E S	41		
06430	11.1			œ041-	37.9 1	4006	25.7 1	21.8 4 41	9.6		:
986		6000	-	2 388 38 38 38 38 38 38 38 38 38 38 38 38		247 0 247 0 3 3 3 3 3 3		2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		00000000	7
149 115 67 115	112	68886	34	478 652 315 532	494	198 198 115 1315 315 315 315	332	112 93 47 205	114	103 103 12 15	37
25 10 25 10 25 10 23 0	35.9	16 12 6 3 1 8 2 10	8.9	175 9 167 14 112 9 186 10	160.7	90 13 123 10 121 10 125 8	115.4	53 1 20 15 16 5 66 0	39.1	10 8 7 22 33 1	6.0
Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1914 1915	Average	Total crop— 1912 1913 1914 1914	Average	11, tree No. 23-86-2, Valencia Strain: Orchard grade— 1912 1913 1914	Average	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912 1913 1914 1915	Average

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

əldai	of var stiuts.	Number	9 32 37	23			: : : : :	:	
	number tiuri req	Arerage sbeeds	0.44 3.89 2.89 5.11	3.08	0 4.33 6.33	3.67	2.00 4.00 4.33	3.42	4.00 3.67 4.67 3.25
	٠. : و	Number.	0000	0	0000	0	0000	0	
	80 and larger.	.tdgisW	Lbs.oz. 0 0 0 0 0 0	0	0000	0	0000	0	
	,	Number.	0004	02	8000	0.5	0000	0	
	96	Weight.	Lbs.oz. 4 11 0 0 0 0 0 0	1.3	000	0.3	0000	0	
	1	Number.	0700	9	4000	-	4000	-	
	112	Weight.	Lbs.oz. 13 11 0 0 1 2 0 0	3.7	4000	0.6	0000	0.6	
		Number.	2002	4	10000	-	4000	-	
1	126	vtdgisW	Lbs.oz. 6 11 0 0 1 4 1 2	2.3	20 00 00 00 00	0.7	4000	0.6	
		Number.	000100	22	27	=	100	7	
	150	.tdgisW	Lbs.oz. 40 5 0 0 0 9 3 13	11.2	26 1 0 8 1 4	7.1	14 10 0 0 0 0 0 8	8.	
		Number.	74 11 48	35	13 4 51	16	2010	7	
Sizes.	176	Weight.	Lbs.oz. 34 4 4 0 8 8 10 21 1	16.1	18 5 2 3 1 15 5 11	7.0	5008	3.0	
0.1		Number.	64 16 52 150	7.1	65 9 9 9	47	22 18 31 18	Ξ	
	200	.tdgisV/	Lbs.oz. 26 13 6 7 6 7 57 13	28.6	26 9 13 2 10 35 1	18.5	0 0 0 1 3 8 6 6 13	4.4	
		Number.	23 83 155	73	25 85 85	41	34 34	17	
	216	.tdgisW	Lbs.oz. 8 7 10 15 33 14 52 4	26.4	9 13 8 15 10 1 28 9	14.3	9 13 1 4 1 0 11 6	5.9	
		Number.	22 111 113 121	92	27 105 71 59	99	16 22 82 82	32	
	250	.tdgisW	Lbs.oz. 7 0 34 1 41 4 36 12	8.62	8 11 32 14 24 14 17 14	21.1	5 4 2 3 23 12	9.6	
	d.	Number.	395 92 73	142	11 195 252 36	124	129 91 50	74	
	288 and smaller.	Weight.	Lbs.oz. 2 0 92 10 27 12 18 11	35.3	3. 0 47. 9 71. 13	33.0	7 9 27 3 21 12 11 14	17.1	
		Number.	328 657 374 572	483	234 357 289	310	148 1142 119 190	150	101 66 15 10 10 10 10 48
	Total.	Weight.	Cbs. oz. 152 5 155 1 140 2 194 9	160.5	98 8 101 14 111 14 97 14	102.5	60 12 31 8 31 0 56 7	44.9	38 0 6 0 2 8 1 14 12.1
	Rank, tree number, strain,		11, tree No. 23-86-2, Valencia strain—Continued. Total crop—1912. 1913. 1914.	Average	12, tree No. 23-90-2, Valencia strain: Orchard grade— 1912. 1913. 1914.	Average	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912 1913 1913 1914 1915 Average

23 861 88	32				:	::::		1222	4		
5.3.89	3.45	1.00 6.00 6.33	3.75	2.33 7.50 4.00 6.67	5.13	1.00 7.00 7.00 7.00	4.92	1. 44 4. 50 4. 89 6. 67	4.38	3.00 5.33 5.67	4.92
0000	0	0000	0	0000	0			0000	0	0000	0
0000	0	0000	0	0000	0			0000	0	0000	0
0000	.5	0000	0	0000	0			0000	0	0000	0
2000	0.3	0000	0	0000	0			0000	0	0000	0
H000		0000		0000				0000		0000	
×000	25	8000	-	8000	0.5			10000	-	0000	-
4000	1.1	1 12 0 0 0 0 0 0	0.4	1000	0.3			2 15 0 0 0 0 0 0	0.7	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.5
6000	82	8000	0.5	0000	0		1 :	8000	0.5	0000	-
15000	1.2	1000	0.3	0000	0			1000	0.3	0008	0.4
4000		1000	- 1	8000	2			1	-	0001	
08 4	22	34	0 10	1000	0			2808	3 12	49021	9 2
40 11 0 8 0 9 1 12	10.9	17 1 1 8 1 8 1 8	5.0	4000	1.			2101	6.3	1 15 3 2 0 0 5 12	2.7
61 6 18	22	45 0 17	17	13	4			58 4 0 10 10	20	19 16 39	19
27 14 2 11 1 15 7 13	10.1	20 4 1 10 0 0 7 4	7.3	5 15 0 0 0 14	1.7			26 1 10 8 2 8 2	9.0	8 8 6 15 1 0 17 1	8.4
87 26 9 1111	28	130 29 7 7 133	75	0048	7			150 29 11 135	82	91 66 119 125	7.5
12 13 14	6.3	9445	3.2	3 11 0 11 0 11 0 11 0 11 0 11 0 11 0 11	2.7			9 15 8	8.1	13 0 10 14	9.6
35 10 3 41	22	52 11 3 49	29	8010				11 60	31	35 8 8 47	29
28 28 119	58	60 38 38 128	99	15 0 3 21	10		:	75 38 39 149	92	63 50 91	19
19 10 10 3 11 1 39 15	20.4	21 6 113 2 14 15 12 1	22.9	5 10 0 0 1 1 7 8	3.4			27 0 13 2 16 0 49 9	26.4	22 6 17 15 15 6 31 5	21.8
43 112 193 141 3	97	666 64 64 64 44	16	7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	25			73 150 105 134 4	116	112 102 83 103 50 3	87
	9	4637	0	92236	000			22 10	8	0 115 115 115 115 115 115 115 115 115 11	8
13 15 35 1 31 15 41 10	30.	21 32 18	29.	21.2	7.			23 1 23 1 28 40	36.	35 32 1 29 15	28.
38 324 343 86	198	23 195 167 11	66	12 75 91 62	09			35 270 258 73	159	61 109 181 8	06
212000	0.0	20000	7.2	45744	4.4			1327	9 .	1-0000	9 .
10 74 93 21	20	9848	27	24 119 119	14.	::::	;	9 62 75 19	41	16 27 54 2	24
483 493 489	208	363 414 298 356	358	77 80 1115 1157	107	22 55 11	21	461 549 422 524	489	350 323 323 328	338
197 4 139 6 145 6 156 3	159.5	141 5 119 13 102 2 121 13	121.3	30 10 15 4 32 12 46 15	31.4	86 12 2 11 2 0 2 7	3.7	178 11 138 12 136 14 171 3	156.4	120 10 116 4 108 15 121 1	116.7
Total crop— 1912 1913 1914 1916	Average	13, tree No. 23-85-2, Valencia strain:	Average	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912 1913 1914	Average	14, tree No. 23–87–2, Valencia strain: Orchard grade— 1912 1913 1914	Average

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

əldsi		Number	33 27	4	33 67 33	:	56 33 33 7 00 6	6 4	000000000000000000000000000000000000000	33
	number ruit per fruit	93gayaA spage	4.67 4.33 4.67	4.	5.25.3	4.83	ಬ್ಯಸ್ಥ 4 ಸ್ಥ	4.56	16697	33
	nd ger.	Number.	0000	0		:	0000	0	0000	0
	80 and larger.	Weight	Lbs.oz 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0			0000	0	0000	0
		Number.	0000	0			0000	0	1000	0.3
	96	.tdgisW	Lbs. oz. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0			0000	0	0 11 0 0 0 0 0 0	0.3
		Number.	0000	0			0000	-	4000	-
	112	Weight.	$\begin{array}{ccc} Lbs.oz. \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{array}$	0			0 0 0 0 0 0	0.5	0000	0.6
		Number.	0000	0			0000	1	70000	-
	126	.tdgisV/	$\begin{array}{ccc} Lbs.oz. \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{array}$	0		1 2 4 4	0001	0.4	2 10 0 0 0 0 0 0	0.7
		Number.	0000	2.			13 6 0 12	00	88000	10
	150	Weight.	$\begin{array}{c} Lbs.oz. \\ 4 & 11 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{array}$	1.2			6 10 3 2 0 0 5 12	3.9	18 11 0 0 0 0 0 0	4.7
		Number.	17 0 11 8	-1			36 16 3 47	26	51	14
Sizes.	176	Weight.	Lbs.oz. 8 0 0 0 0 7 3 6	3.0			16 8 6 15 1 7 20 7	11.3	22 2 4 0 0 0 0	6.3
		Number.		12			126 68 21 21 134	87	92 15 46	46
	200	Weight.	Lbs.oz. 14 9- 0 13 0 12 3 8	4.9			50 6 26 13 9 6 51 6	34.5	36 6 111 5 6 7 16 8	17.7
		Number.	43 20 20 20	20			106 55 40 120	80	40 45 61 58	51
	216	Weight.	$\begin{array}{c} Lbs.oz.\\ 16 & 1\\ 1 & 12\\ 0 & 10\\ 10 & 0 \end{array}$	7.1			38 7 19 11 16 0 41 5	28.9	14 5 15 13 24 8 19 0	18.4
		Number.	38	23			148 113 97 81	110	32 88 125 163	102
	250	Weight.	Lbs.oz. 11 15 3 4 4 14 9 6	7.4			47 8 36 3 34 11 24 12	35.8	10 4 27 8 44 3 48 9	32.6
	nd er.	Number.	38 68 31 17	39			99 177 212 25	128	11 146 209 140	125
	288 and smaller.	Weight.	Lbs.oz. 10 15 14 12 8 8 4 0	9.5			27 6 42 4 62 10 6 3	34.6	2 15 37 0 62 12 36 0	34.7
		Number.	178 86 50 94	102	22833	21	561 466 386 430	461	274 313 411 407	351
	Total	.thgisW	Lbs. oz. 66 3 20 9 15 3 30 4	33.0	10 15 3 11 2 2 2 2	4.7	197 12 140 8 126 4 153 7	154. 5	110 12 93 14 138 7 120 1	115.8
	Rank, tree number, strain,		14, tree No. 23-87-2, Valencia Strain—Continued. Standard grade— 1912. 1913. 1914.	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912 1913 1914 1914	Average	15, tree No. 23-90-9, Valencia Strain: Orchard grade— 1912 1913 1914	Average

	1 :	::::		0000	8		;		:		1 :
1.33 2.67 6.67	3.50	1.67 4.67 5.00		6.33	3.58	. 0 2.67 3.33 4.67	2.67	5.33 4.67	3.33.	. 67 2. 67 3. 67	2.75
0000	0	1 ::::	1:	0000	0	0000	0	0000	0		
0000	0			0000	0	0000	0	0000	0	* * * * * * * * * * * * * * * * * * *	
0000	0		:	1 -000	8	2000	9	0000	0		
0000	0			1000	0.2 0	9000	x	0000	0		
0000			1	0000	-	15000	20	0000	_		
2000	-	:::::	1:	1	63	24 1 0 0	9	88000	10		
0000	0.7			2000	1.3	14 15 0 10 0 0 0 0	3.9	23000	5.8		
1000	0.3	::::		9000	-	20102	2	2000	-		
0000	0.1			8000	0.8	2 15 0 0 0 0 1 2	1.2	2000	0.7		
8000	1		1:	2000	16	2002	∞	335	6		
13 11 0 0 0 0 0	3.4			95 000 000 000	8.1	5 15 2 13 5 12 5 12	3.6	1000	8.4		
1000	101		1:	32 0	24	16 4 31 3 3 1 4	14	16 1 18 8 8 8	-1		
0000	4.9			1460	6.5	41 811	0.9	41 80 21 120 8	60.00		
6000	1		1:	2700	11	13		20-00			
21088	200			160 160 48 48	63	252.3	53	1147	00		
28 4 0 0 0 7 0 11	7.3			64 10 11 5 6 14 17 3	25.0	1 6 20 8 9 15 51 6	20.8	4 11 0 7 1 11 6 12	3.4		
27 2 3 10	Ξ			67 47 64 68	62	0 56 74 106	59	0 ro 01 88	13		
9 14 0 11 3 2	3.7			24 3 16 8 25 10 22 2	22.1	0 0 18 14 29 9 36 12	21.3	2 6 1 12 0 12 13 10	4.6		
12 5 42	17			44 93 132 205	119	1 81 160 62	92	24112	26		
13	4.9			155 A	7.5	102226	25.6	21.0 % 4	8.1	-:::	
4101				282 446 60 60 60 60	3 37	25 57 57 19		0488			
52232	42			22122	168	0 61 207 10	70	1848	41		
5 15 17 1 5 10 11 10	10.1			8 14 54 1 68 6 47 10	44. 7	0 0 15 10 62 14 2 9	20.3	0 4 22 1 10 11 4 12	9.4	1 1 1 1	
201 82 33 104	105	10 16 28	24	485 438 460 539	480	71 274 467 355	292	114 120 63 161	115	30 59 11 11	28
84 14 19 3 9 7 27 4	35.2	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	3.2	199 6 116 8 150 2 150 10	154.2	42 13 91 3 161 0 130 14	106.5	61 1 29 1 17 10 52 12	40.1	18 4 4 6 2 1 1 11	6.6
Standard grade— 1912 1913 1914 1914 1915.	Average	Cull fruits— 1912 1913 1914 1914 1915	Average	Total crop— 1912 1913 1913 1914 1915	Average	16, tree No. 23-93-9, Valencia Strain: Orchard grade— 1912 1913 1914 1814 1814 1815 1815 1815 1815 1815 18	Average	Standard grade— 1912 1913 1913 1914 1915	Average	Cull fruits— 1912 1913 1913 1915	Average

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

1	əldai	of vari		OH85	4		:		:		
		number truit.	Average seeds	0.22 4.33 4.33	3.00	1.00 5.33 5.33	3.25	1.33 6.00 7.00	4,83	3.33 3.67 3.67 4.67	3.84
		700	Number.	0000	0	0000	0	0000	0		
į		80 and larger.	Weight.	Lbs. oz. 0 0 0 0 0 0 0 0	0		0 0	0000	0		
			Number.	2000	9	. 5000	4	0000	0		
		96	Weight.	Lbs.oz. 15 6 0 0 0 0 0 0	3.00	10 0 0 0 0 0	2.6.	0000	0		
			Number.	62	16	23	9	73000	4		
		112	Weight.	Lbs. oz. 38 . 4 . 0 10 . 0 0 0 0 0	9.7	13 12 0 0 0 0 0 10	3.6	8 13 0 0 0 0	2.2		
			Number.	10	1	10	4	4000	-		
		126	Weight.	Lbs.oz. 5 11 0 9 0 0 1 2	1.8	5 14 0 10 0 0 1 8	2.0	4000	9.0		
			Number.	47 6 0 12	16	43	17	24 0 1 0	9		
		150	Weight.	Lbs. oz. 25 0 2 13 0 0 0 5 12	8.4	22 2 9 0 0 10 2	8.7	13 3 0 0 0 0	3,4		
			Number.	20 17 5 39	20	55 m 25	28	80024	9		
	Sizes.	176	Weight.	Lbs.oz. 9 12 7 9 2 8 17 7	9.3	15 15 3 9 2 8 26 13	12.2	8 9 0 0 0 15 1 12	2.8		
	02		Number.	14 53 27 149	61	16 60 229 146	63	23.81	13		
		200	Weight.	Lbs. oz. 6 1 20 15 11 10 58 2	24.2	6 12 23 12 13 0 56 6	25.0	×0000	5,3		
			Number.	6 61 76 144	72	7, 49 44 50 50	63	13 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	19		
		216	Weight.	Lbs. oz. 20 10 30 5 50 6	25.9	23.22 23.22 20.21 20.21 20.21	23.2	5 10 1 7 4 15 15 4	6.8		
			Number.	3 95 171 140	102	3 110 118 27	65	23 24 47	25		
		250	Weight.	Lbs.oz. 1 2 29 7 60 10 43 8	33.7	0 15 34 4 43 6 8 6	21.7	2 2 6 14 8 2 14 8	7.9		
		P :	Number.	160 251 30	111	0 16 67 9	42	12 12 12	32		
		288 and smaller.	.tdgisW	Lbs.az. 0 4 37 11 73 9	29.7	22 0 21 7 21 7 2 6	11.5	0 4 18 12 7 6 2 12	7.3		
i			Number.	215 453 542 527	434	152 339 313 354	290	103 118 73 130	106	111 63 177 17	27
		Total.	Weight.	<i>Lbs. oz.</i> 122 2 124 10 180 11 185 5	153.2	78 2 109 10 118 10 135 8	110.5	49 4 27 8 25 2 43 7	36.3	8 4 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	4.3
		Rank, tree number, strain, grade, and year.		16, tree No. 23-93-9, Valencia Strain—Continued. Folal crop— 1912 1913 1914	Average	17, tree No. 23–88–10, Valencia Strain: Orchard grade— 1912 1914 1914	Average	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1916	Average

00012	2-		:	::::		::::	:	44.21	20		:
1.89 4.67 3.67 5.67	3.98	2.33 3.67 5.67	3.00	1.33 3.67 6.33	3.92	1.00 4.33 5.33	3.29	3.13 5.78 5.78	3.42	1,00 2,67 3,33 3,67	2.67
0000	0	0000	0	0000	0	1 1 1 1 1 1	:	0000	0	0000	0
0000	0	0000	0	0000	0			0000	0	0000	0
0000		0000		0000				0000		0000	
12000	4	8000	П	0000	0			8000	н	4000	-
10 5	2.6	0001	0, 5	0000	0		:	0000	0.5	2 13 0 0 0 0 0	0.7
38	10	000	23	8000				0000	က	8000	2
22 0 0 0 0 10	5.8	40.00 40.00	1.1	1 14 0 0 0 0 0 0	0.5			0000	1.5	4 11 0 0 0 0 0 0	1.2
11 0 0	2	9000	7	0000	0			9000	03	0000	3
8 2 0 10 0 0 1 8	2.6	0000	0.8	0000	0			0000	0.8	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.4
21 21 21	24	087119	22	16 0 1	70			33.7	22	88000	10
10023 2002 2003	13.1	40 11 0 9 0 8 2 14	11.2	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.5			49 0 0 9 1 13 3 6	13.7	9 10 0 0 0 0	2.4
53	34	58 5 10 34	27	13	4			71 5 13 35	31	80 52	14
24 3 3 9 28 9	15.0	26 2 2 3 14 9	12.1	6 3 0 0 1 8 0 7	2.0			32 8 2 3 6 13 15 0	14.1	18 12 2 2 0 0 3 6	6.1
36 61 37 169	92	67 16 49 162	74	11000	2		1	78 16 55 174	81	52 31 4 104	48
15 3 24 3 16 4 65 9	30.3	27 2 6 1 59 8	28.9	4 10 0 0 2 12 4 11	3.0			31 12 6 1 25 12 64 3	31.9	20 10 11 14 1 12 38 4	18.1
22 68 107 129 6	83	30 282 80 50 50 50	52	33 6 2 3	13		:	40 3 30 77 2 113 6	99	26 26 27 115 33 115 33	56
84 9 11 11	1-	114 01 9	2	117	9.			0.000	00	0110	9
8 5 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	53	10 30 25 25	19	8081	4			14 10 33 37	23	9 117 113 38	19.
9 142 142	90	33 131 54 37	64	27 27 17 81	33			38 158 71 118	96	13 100 95 162	93
3 1 41 2 51 8 22 14	29.6	10 13 39 9 20 8 10 5	20.3	1 10 7 1 6 2 24 14	9.6			12 7 46 10 26 10 35 3	30.3	4 2 30 15 33 10 48 14	29.4
181 92 21	74	180 88 88 88	56	11 71 19 97	50			17 251 47 105	105	6 126 273 107	128
0 4 28 13 5 2 2	18.8	43 5 2 2 0	13.8	2 15 13 11 24 13 25 1	9.11			4 10 57 0 12 15 27 1	25.3	1 12 29 6 80 10 28 10	35.1
266 520 403.	423	290 361 213 327	298	69 100 53 225	112	1800	40	391 561 275 570	449	200 313 405 496	354
117 12 7	-	130053	00	27.758	4.2	13683	7.2	155	63	00 901	0
131 141 147 183	151	127 101 88 114	107	29 21 18 18 67	34	150020		171 130 109 184	149	77 92 129 157	114.
Total crop— 1912 1913 1914 1914	Average	18, tree No. 23-85-3, Valencia strain: Orchard grade— 1912. 1913. 1914.	Average	Standard grade— 1912 1913 1914	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912 1913 1914	Average	19, tree No. 23-87-8, Valencia Strain. Orchard grade— 1912. 1913. 1914.	Average

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

able	of vari	Number Il	1111	:		1 :	3 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2		:
	number per fruit.	Average seeds	2.33 4.00 3.67 8.00	4.50	1.67 5.00 5.00 3.00	3.84	1.67 3.89 4.22 4.89	3.67	1.67 1.00 4.33 3.67	2.67
	p :	Number.	0000	0.		1	0000	0	0000	0
	80 and larger,	Weight.	Lbs.oz. 0 0 0 0 0 0 0 0	0			0000	0	0000	0
		Number.	0000	0			4000	-	0000	0
	96	Weight.	Lbs. oz. 0 0 0 0 0 0	0			2 13 0 0 0 0	0.7	0000	0
		Number.	160	4			24 0 0 0	9	0007	2
	112	Weight.	Lbs. oz. 9 5 0 0 0 0	2.3			14 0 0 0 0 0 0 0	3.5	4 H G O O O	1.5
		Number.	70000	7-1			12000	4	4004	2
	126	.tdgioW	Lbs. oz. 2 14 0 0 0 0 0 0 0	0.7			8000	2.1	2002	1.1
		Number.	98000	6			72000	19	38 10 10 23	18
	150	Weight.	Lbs. oz. 18 15 0 0 0 0 0 0	4.7			0000	7.1	19 1 5 7 0 0 11 6	9.0
	-	Number.	12003	1			00000	20	52 22 45	32
Sizes.	176	Weight.	Lbs. oz. 10 9 0 0 1 0 0 7	3.0			29 20 20 30 313	9.1	25 11 10 0 0 15 20 6	14.3
02		Number.	4004	10			866 31 108 108	52	52 52 125	74
	200	Weight.	Lbs. oz. 5 14 0 0 0 0 1 8	1.8			26 8 11 14 1 12 39 12	20.0	36 14 21 7 12 11 50 2	30.3
		Number.	2000	9			34 54 35	63	25 25 45 45	39
	216	Weight.	Lbs.oz. 3 0 1 0 0 12 4 6	2.3			12 0 18 11 14 2 42 14	21.9	9 2 12 4 22 4 14 14	14.6
		Number.	45000	200			18 115 103 207	111	28 63 134 16	03
ŀ	250	,TugieW	Lbs.oz. 1 11 4 4 2 11 13 2	5.4			5 13 35 3 36 5 62 0	34.8	19 14 48 1 5 2	20.0
1	71 4	Number.	7. 7. 109 38 50	51			13 235 311 157	179	8 70 161 9	62
	288 and smaller.		.02. 14. 14. 3	4		:	04281	50	11 13 11 11 11 11 11 11 11 11 11 11 11 1	0
	28 Sm	.tdgisW	Lbs.c 1 1 21 1 9 9	11.			3 1 51 90 40 1	46.	2 17 1 2 1 2 1	18.
	- FE	Number.	114 127 50 50	101	23 23 112	25	318 499 478 620	479	257 252 381 204	289
	Total.	.tdgisW	Lbs. 02. 54. 2 27. 2 13. 15 31. 10	31.7	2 4 4 8 8 8 13 8 8 13 8 8 13 8 8 13 8 13	3.4	132 10 124 0 147 13 192 1	149.1	108 12 88 3 133 3 106 12	109.2
	Rank, tree number, strain, grade, and year,		19, tree No. 23–87–8, Valencia strain—Continued. Standard grade— 1912 1913 1914	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912 1913 1914 1914	Average	20, tree No. 23–87–5, Valencia Strain: Orchard grade— 1912 1913 1914 1914	Average

::::	:	::::	:	21313	2-			:::::	:		
1.00 3.67 6.00	3.67	1.00 3.33 4.00	3.25	1.22 2.78 4.00 4.78	3.20	0.1.00 3.33	1.58	67 3.67 3.67 2.67	2.67	53.53	3.71
0-00	0.3		:	000	0.3	0000	0	0000	0		
0 0 0 0 0 0	0.2			0000	0.3	0000	0	0000	0		
.0000	0			0000	0	0000	0.5	0000	0		
0000	0			0000	0	r000	0.4	0000	0		
4200	2		- : :	0000		1000		0000			
0400	4		: [11 400	8 4	12 0 0 0 0 0 0	9	0000	9 2		: [
4-100	1.			8 10 0 0 0 0	2.5	7 0 0 0	1.6	8000	0.		
HH00	0.5			20104	က	11 0 0	33	H000	0.3		:
00.00	0.3			2 14 0 10 2 3	1.4	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.8	6000	0.1		
	20				2				4		
81 00 00 00 00	4		: :	6 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3 22	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	8 11	010	0	1 : : : :	
0000	2.			282	11.	2002	5.	010	2.		
22004	1-		:	62226	38	32.9.2	19	00410	23		
10 12 0 0 0 0 1 12	3.1			36 7 10 0 0 15 22 22	17.4	15 1 0 14 4 7 13 6	8.5	4022 900%	2.1		
24 0 27 17 17	12			114 52 33 142	85	24 31 34 142	58	41092	6		
10 4 0 0 2 3 7 1	4.9			47 2 21 7 14 14 57 3	35.2	10 2 11 14 15 13 52 15	22.7	6 4 0 0 2 10 5 15	3.7		
12 12 23 23 23 23 23 23 23 23 23 23 23 23 23	13			37 68 65 65	25	5 40 103	57	2229	200		
84128	20.			0010	19.4	4 11 13 4	20.4	112	6.0		
30 8 4 8 8	20			23 6 23 6 23 8 28 8 28		6 13 33 33 33 4 33 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	59 2	0 0 11 0 17 6 103 16	33		
	6 2			31 73 172 8 46	2 81	1 0 0 108 5 80 13 41	3		8		
0 15 3 2 12 10 9 10	6.0			10 3 23 0 60 11 14 12	27.	2 33 0 33 0 11 13	19.	0 0 3 1 5 13 32 5	10.8		
122	46		:	15 138 253 26	108	170 113 21	92	2482	58		
0454	11.3			8 1 8 1	29.3	41-04	20.5	0.151	14.2		
2484	1	1000000		67334	_	0482		7 17 17 15 15 9 23			
91 87 147 91	104	252 16 8	21	373 372 544 363	413	133 351 315 345	286	47 97 101 259	126	1487	34
42 14 22 6 43 3 3 31 3 3	34.9	9 11 22 11 2 6	4.5	161 5 113 10 179 1 140 5	148.6	65 6 99 15 119 15 119 6	101.2	23 5 10 15 33 13 79 13	39.5	20 5 6 4 0 15 2 10	7.5
Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1915	Average	Total crop— 1912 1913 1914 1914	Average	21, tree No. 23-85-4, Valencia Strain: Orchard grade— 1912 1913 1914	Average	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912 1913 1914 1914	Average

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

əldei	of var.	Number	14 29 45	26			: : : :	:		:
	number Der fruit.	agraevA sbeez	0.56 3.13 3.00 3.67	2.59	. 33 2. 33 3. 33	1.75	1.00 2.33 3.67 3.33	2.58	0 33 2.67 1.67	1.17
	d.	Number.	0000	0	0000	0	0000	0		:
	80 and larger.	Weight.	Lbs. 02. 0 0 0 0 0 0 0 0	0	0000	0	0000	0		
		Number.	8000	0.5	8000	1	0000	0		-:
	96	.tdgisW	Lbs. oz. 1 7 0 0 0 0	0.4	1 14 0 0 0 0 0 0	0.5	0000	0		
		Number.	10000	70	11000	ಣ	2000	4		:
	112	Weight.	Lbs. oz. 11 8 0 0 0 0 0 0	2.9	8000	1.5	8 10 0 0 0 0	2.2		
		Number.	122	8	8008	2	4000	П		:
	126	Weight.	Lbs. oz. 7 0 0 0 0 9	1.9	2 10 0 0 0 0 1 14	1.1	0000	0.5		:
		Number.	20020	16	20231	19	0017	12		:
	150	Weight.	Lbs. oz. 27 6 0 0 1 1 2 12	7.8	25 7 1 7 9 8	9.3	20 7 0 0 0 9 3 11	6.2		
		Number.	41 2 113 37	23	36 14 0 27	19	35 0 4 11	13		
Sizes.	176	.tdgisW	Lbs. oz. 19 7 0 14 6 7 15 9	10.6	16 2 6 0 11 5	8.4	16 4 0 0 1 11 4 13	5.7		
		Number.	38 31 40 157	29	34 23 67	38	22 00 12	22		
	200	Weight.	Lbs. oz. 16 6 11 14 18 7 58 14	26.4	13 10 10 15 8 15 25 10	14.8	21 7 3 3 3 8 0	8.7		
		Number.	7 42 94 149	73	212	35	31212	17		:
	216	Weight.	Lbs.oz. 2 10 14 6 33 3 49 9 1	26.4	11 8 11 13 15 0 15 0	12.4	4 4 0 4 0 10 13	5.7		
		Number.	L19 97 144	92	88 108 13	54	11 28 28 28	20	•	-
	250	Weight.	Lbs.oz. 2 1 36 1 36 2 44 2	29.6	22 6 37 8 4 5	17.5	3 7 6 11 8 8 6	6.2		
	r.	Number.	3 254 111	134	1930	72	150 67 9	528		
	288 and smaller.	Weight.	Lbs. oz. 0 14 57 8 51 15 28 5	34.7	0 13 22 10 65 1 0 10	22.1	1 6 32 6 16 10 2 2	13.1		
		Number.	221 526 420 615	446	167 255 370 177	242	173 194 106 108	145	55 11 8	28
	Total.	Weight.	Lbs. oz. 109 0 126 15 154 11 201 13	148.1	74 78 130 5 68 4	87.8	77 13 46 15 30 9 37 13	48.3	28 4 2 11 2 5 14 · 6	11.9
	Rank, tree number, strain,	· · · · · · · · · · · · · · · · · · ·	21, tree No. 23-85-4, Valencia strain—Continued. Total crop— 1912. 1913. 1914.	Average	22, tree No. 23–92–1, Valencia strain: Orchard grade— 1912. 1913. 1914.	. Average	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1914	Average

20 16 52 21	27		[]				1 :	0000	3		:
. 22 . 89 . 78	. 83	2.33 5.00 7.67	83	. 67 5. 67 7. 33	127	8888	13	. 4.4.4.8. 111.4.8. 111.11.11.11.11.11.11.11.11.11.11.11.1	. 28	4.333 4.333	00
0000	0 1.	0000	0.3	0000	0 4.	H.4:017-		0000	0 4	0000	0 3.
0000	0	0000	0	0000	0		:	0000	0	0000	0
0000		0000		0000				0,000		0000	
8000	-	8000	0.5	0000	=			8000	0.5	70000	-
1 14 0 0 0 0 0 0	0.5	4000	0.1	0000	0			4000 000	0.3	8000	6 0
0000	1-	0000	70	12000	4			35.000	6	£000	60
14 12 0 0 0 0 0 0	3.7	0 0 0 0 0 0 0 0 0	2.9	8 13 0 0 0 0	2.2			20 7	5.1	8000	2.0
0008	60	12 10 0 7	10	0000				15 2 0 7	9	6001	8
13 0 0 14	1-	12000	9.	0000	2			90001	0.	9000	10
400-	1	9000	2	4000	0			∞00m	3	7000	-
91	31	64 0 1 25	23	800 o	6			97 0 1 26	31	26 0 1	6
45 14 1 7 1 9 13 3	15.5	32 7 0 0 0 8 11 10	11.1	17 5 0 0 0 0 0 0	4.5			49 12 0 0 0 8 12 2	15.8	13 12 0 0 0 8 3 5	4.4
174 4 88	32	£, 70 € 50 20	25	20 10 10	x			45 4.8	33	29 116 43	23
32 6 6 0 1 11 16 2	14.0	15 11 2 4 1 7 25 5	11.2	000 000 4000 4000	3.5			25 22 29 9 9	14.7	13 14 1 5 8 9 18 8	10.6
. \$28 8. \$28 8. \$34	59	32 38 144 144	09	16	10			84 198 1161	69	26 24 37 166	63
2 12 10 12 10 12 10 12 10 12 10 12 10 12 10 12 10 10 10 10 10 10 10 10 10 10 10 10 10	23. 4	4514 1110 8 8	23. 3	6 14 0 11 1 11 6 9	4.0			20 20 15 10 63 1	27.8	47.88	25.1
26 35 45 14 57 10 76 33	51	8 65 114 90 10 56 56	55	2-45-8	11		-:	116 27 170 110 110 110 110 110 110 110 110 11	99	2 10 34 9 82 17 133 62	63
l-s-	-	7500x	9		6		H		0	080	00
9 6 15 8 21 13 25 13	18.	22 35 19 19	19.	2 15 2 8 2 8 12 8 12	60			24 34 37 14 28 4 4 4 4	24.	10 12 44 44	22.
110 126 141	74	129 103 20	65	28 29 19	15			157 112 39	81	120 68 63	63
5 13 33 1 12 11	23.7	2 15 2 15 37 4 8 8	21.8	1 10 8 4 6 0	4.7			48 12 40 5 12 8	26.5	0 5 22 10 18 0	20.3
240 260 12	130	103 67	45	122	35			225 75 14	80	186 33 18	9
2. 3 55 0 81 11 2 12	35 4	20 20 12 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	12.6	0 12 27 0 1 14 1 4	1-			1 0 54 5 22 10 3 4	20.3	4 8 2 3 8 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	15.4
399 482 293	415	182 340 288 317	282	103 729 73	92	21. 21. 6	33	33.4 33.8 40.2 40.2	407	112 367 237 431	287
-38 Be	0	200-	5	4813	6.0	x 010 t	7.0	.42258	8	113	6
180 127 163 120	148	87 107 106 125	106	449 37 27	8	844-	oc	159 120 120 153	146.	26 106 97 151	102.
Total crop— 1912 1913 1914 1915	Average	23, tree No. 23–75–19, Valencia Strain: Orchard grade— 1912: 1914: 1914:	Average	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1915	Average	Total crop— 1912 1913 1914 1915	Average	24, tree No. 23-86-6, Valencia strain: Orchard grade— 1912. 1913.	Average

14648°—18—Bull. 624——3

Table 1.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

pje	of varia uits.	Number	::::	:			9 9 17 31	17		
ìo	number per fruit.	Average seeds	0.33 2.33 2.00 2.00	2.25	3. 33 3. 33 3. 33	3.50	3.67 3.67 3.22 3.22	2.93	0 2.00 5.33	2.75
	_ :	Number.	0000	0			0000	0	0000	0
	80 and larger.	Weight.	Lbs.oz. 0 0 0 0 0 0	0			0000	0	0000	0
		Number.	0000	0 .			2000	7	10000	-
	96	Weight.	Lbs.oz. 0 0 0 0 0 0 0 0	0			8000 8000	0.9	0000	0.9
		Number.	41 0 0	4			27 00 0	2	9100	2
	112	Weight.	Lbs.oz. 9 0 0 0 0 0	2.3			17 2 0 0 0 0	4.3	3 10 0 10 0 0	1.1
		Number.	4000	-			E00-1	4	8000	2
	126	Weight.	Lbs.oz. 2 6 0 0 0 0 0 0	0.6			7 12 0 0 0 0 0 9	2.1	4 11 0 0 0 0 0 0	1.2
		Number.	26.	7			20028	16	42 1 0 9	13
	150	.tdgisW	Lbs.oz. 14 8 0 0 0 8 0 8	3.9			28 4 0 0 1 0 3 13	8,3	21 0 0 4 5 5	6.5
		Number.	18	7			74 40 13 24	30	38 88 24 7 24	19
Sizes.	176	Weight.	Lbs.oz. 8 12 0 9 1 7 2 6	3.3			22 10 1 14 10 0 20 14	13.8	17 6 3 10 3 12 10 5	8.8
0.1		Number.	26 1 × 41	12			25 25 180	94	42 32 25 140	09.
	200	Weight.	Cbs.oz. 11. 7 0 6 3 7 5 11	5.2			22 9 13 20 15 68 3	30.3	16 14 12 5 11 10 52 11	23.4
		Number.	2 - 1 - 1 - 2	13			14 39 161 161	94	15 36 69 97	54
	216	Weight.	Lbs.oz. 4 10 1 12 2 12 10 1	8.4		-	5 6 13 12 37 4 54 1	27.6	28 28 8 33 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	20.0
		Number.	27 17 18 33	91			136 82 96	13	13 93 90	89
	250	Weight.	Lbs.oz. 0 11 4 12 4 14 10 8	5.2			1 1 1 4 1 1 4 8 8 8 8 8 8 8 8 8 8 8 8 8	25.5	228 4 3 27 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	22.0
1	ਰ :	Number.	137 137 57	54			323	113	4 177 66 46	73
	288 and smaller.	Weight.	Lbs.oz. 0 9 28 0 1 5 3 15 2	12.2			0 13 15 15 19 10	27.6	1 0 1 22 1 0 1 12 4 1 12 4 4 1 12 4 4 1 12 4 4 1 12 4 4 1 12 4 4 1 12 4 4 1 12 4 4 1 1 1 1	19.0
		Number.	104 160 52 139	114	17 54 12 13	24	233 581 583 583	425	173 348 348 406	292
	Total.	Weight.	Lbs. oz. 51 15 35 7 18 3 44 4	37.5	9 7 2 1 14 3 6	5.0	118 3 146 13 117 8 199 0	145.4	77 14 99 9 93 3 140 4	102.7
	Rank, tree number, strain,		24, tree No. 23-86-6, Valencia strain—Continued. Standard grade— 1912. 1913. 1914.	Average	Cull fruits— 1912 1913 1914 1915	Average	Total crop— 1912 1913 1914 1914	Average	25, tree No. 23-87-9, Valencia Strain: Orchard grado— 1912 1913 1914 1915	Average

	:		:	20 115 443 47	31		:				:
. 67 3.33 2.33 4.67	2.75	3.00	2.08	2. 22 3. 00 4. 33	2.53	2.00 2.67 3.67 3.67	3.42	3.2.3.6	2.42	3.00	2.50
0000	0			0000	0	0000	0	0000	0		
0000	0			0000	0	0000	0	0000	0		
0000	0			2000	п	0000	0	0000	0		
0000	0			0004	6.0	0000	0	0000	0		
0000	4			11000	5	0000	0	0000	-		
0000	-		:	0000	2	0000	0	9000	9		
×000	2.			11000	3	0000		8000	0.		
-0-0	0.5			6010	8	0000	0	1000	0.3		: 1
0000	0.3			4000	1.5	0000	0	0000	0.1		
	000			1000		0000		0000			
. 0 25	00			9 4 1 6 4	21	119	9	101	7 5		
13 0 0 0 0 0 0 0 0	4.2			34 5 0 8 3 13 4 5	10.7	2009 4006	2.9	9 15 0 8 0 0 0 7	2.7		
20 7 1 7 9	6			58 14 30	28	35	15	120016	7		
2000	4.1			5005	12.8	0401	6.5	2042	3.4		1 : 1
0000			-:-	26 4 4 4 112		119000		7.004	_		
112	Ξ	-		259 355 37 150	2.0	60 16 4 101	45	32 1 25	20		
7-1:34 842-1	4.4			24 1 13 9 16 12 56 12	27.7	24 6 6 5 5 1 13 38 8	17.8	19 3 0 13 8 12 9	တ်		
43.9857	16			20 44 78 140	7.1	88833	40	36 23 36	24		
41 8 11	5.7			91741	7	9842	1.4	1100	8.6		
1284				15 32 47	25	41 821 83	14.	113			
32,22,33	22			26 11.7 888 12.8	90	39 106 52	70	831128	32		
4 6 6 12 4 8 11 11	6.8			32 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	29.0	12 14 25 15 37 9 16 6	23.2	6 10 3 2 4 11 25 0	9.6		
1 115 17 36	42			292 83 83 33 33 33	116	22 138 277 3 11	112	118 115 37 26 2	49		
	5			4 6 8 0	5 11	1	5 11		0		
0 8 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	9.5			255 9 21 10	28.	5 13 34 1 79 7 2 14	30.8	4 4 24 9 8 15 6 7	11. (
95 151 67 133	112	5.58	22	288 557 314 545	426	214 261 417 256	287	159 131 58 209	139	32 11 15	26
44 15 34 14 25 15 42 5	37.0	13 3 5 5 0 14 1 12	5.3	136 0 139 12 120 0 184 5	145.0	82 13 75 6 130 11 92 3	95.0	64 0 29 11 16 0 68 10	44.6	10 9 4 5 1 12 3 14	5.1
Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912 1913 1914 1915	Average	26, tree No. 23-88-2, Valencia Strain: Orchard grade 1912 1913 1914	Average	Standard gradé— 1912 1913 1914 1915	Average	Cull fruits— 1912. 1913. 1914. 1915.	Average

TABLE 1.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

əldair	of var	Number	88 89	19	: : : : : : : : : : : : : : : : : : : :	:		:		:
lo :	nədmin Tivii 19d	A verage sbeeds	9.3.2.8. 9.3.7.8 9.5.6.6.	2.70	2.33 5.67 5.00	3.75	1.00 1.33 4.33 5.00	2.92	0 1.67 2.33 5.67	2.42
	وع 1	Number.	0000	0	0000	0	0000	0		:
	80 and larger.	Weight.	Lbs.oz. 0 0 0 0 0 0 0 0	0	0000	0	0000	0		
		Number.	0000	0	9000	2	0000	0		
	96	Weight.	Lbs.oz. 0 0 0 0 0 0 0 0	0	4000 8000	1.1	0000	0		
		Number.	4000	-	2000	4	80-0	-		
	112	Weight.	Lbs.oz. 2 6 0 0 0 0	9.0	8000	2.3	1 14 0 0 0 10 0 0	9.0		
		Number.	H000	0.3	1000	2	000-	0.3		1
	126	Weight.	Lbs.oz. 0 0 0 0 0 0	0.1	3 14 0 0 1 0	1.2	0000	0.2		
		Number.	38	11	10 10	Ξ	E0∞0	70		:
	150	.tdgieW	Lbs.oz. 19 5 0 8 0 0 2 11	5.6	16 13 0 0 0 8 4 11	.5.5	9.0 0 0 0 0 0 0	2.7		
		Number.	. 12 22 25	22	22 23 32	22	127	óο		
Sizes.	176	.tdgisW	Lbs.oz. 23 12 0 14 0 14 13 14	10.0	12 8 1 6 12 5 13 9	6.6	6 1 3 9 4 10	3.7		
02		Number.	105 17 6 133	65	36 31 52 111	65	2022	17		
	200	Weight.	Lbs.oz. 43 9 6 13 2 10 51 1	26.0	14 12 12 6 24 5 52 0	25.9	9 9 0 15 5 5 11 6	6.8		
		Number.	75 75 122 122 1	64	10 82 81 81	46.	12 13 13 67	24		
	216	Weight.	Lbs.oz. 27 11 9 3 12 9 42 8	23.0	3 9 113 7 22 6 25 11	16.3	23 14 23 14	∞.∞		
		Number.	59 121 135	102	103	20	4 9 28 107	37		
	. 250	Weight.	Lbs.oz. 19 8 29 1 42 4 41 6	33.1	24.0 24.0 24.0 24.0 24.0	16.2	1 ° 6 2 ° 9 10 2 33 11	11.4		
	nd er.	Number.	40 253 314 37	161	146 33	- 47	63528 63528	44		
	288 and smaller.	Weight.	Lbs. oz. 10 1 58 10 88 6 9 5	41.6	0 3 35 6 10 10 1 11	12.0	1 13 16 10 7 1 16 8	10.5		
		Number.	405 438 486 486	452	145 -321 229 293	247	74 99 94 278	136	8239	- E
	Total	.tdgisW	Lbs.oz. 157 6 109 6 148 7 164 11	145.0	68 3 94 2 94 8 101 3	90.3	31 13 22 7 36 1 90 11	45.3	16 2 8 6 2 2 5 5	7.2
	Rank, tree number, strain,	grade, and year.	26, tree No. 23–88–2, Valencia strain—Continued. Total crop— 1912 1914 1914	Average	27, tree No. 23-85-6, Valencia Strain: Orchard grade— 1912. 1913.	Average	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912 1913 1914 1914	Average

23 42 68	38		1 :		:	1 ::::		255 336 63	35		1 :
1.00 1.78 4.11 5.22	3.03	3.00 5.67 6.00	4.17	6,00	4.00	5.3.3.33	3.83	1.89 4.56 3.78 5.77	4.00	2.5.3.4.4.33 67.33	3.67
0000	0	0000	0	2000	0			0000	0	0000	0
0000	0	0000	0	0000	0			0000	0	0000	0
0000	-	0.000		0000	_		1	0000	_	0000	
9000	2	0000	0	0000	0		1:	0000	0	0000	0
40 00 00 00 00	1.1	0000	0	0000	0			0000	0	0000	0
8010	20	0000	2	1000	0.3		1	2000	3	4000	-
00.00	2.9	4000	1.3	5000	0.2			4000	1.5	8000	9.0
7 0 0 0 0 0 0 0	8	2000	2	0000				3000	82	8000	2
	4	7000	6	6000	4			1007	60	4000	6
3 14 0 0 0 1 1 10	1.4	2 14 0 0 0 0 0 0	0.0	0001	0.			0001	1.5	2 4 0 0 0 1 1 10	0.6
94000 10000	16	50	14	1.000	60		:	57	17	25 1 1 16	=
23 6 0 0 4 14 4 11	8.2	8008	7.2	3 13 0 0 2 8	1.6			29 0 0 5 0 5 6	80.80	2002	5.2
-	0	2002	6	111	20			32.2.2	8	21 00 12 7	9
9 40 14 4 14 31 3 43	6 30	15 48 15 2 1 23 1 23	3 19	6 0 7 1 14 1	2		:	15 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	5 23	13 20 20 88 38 18 4	91 6
84.58	13.	10001	œ	6004	2.			25	10.	1001	6.
59 33 64 170	85	86 18 18 94	57	12 1 8 30	13			110 19 26 124	20	53 27 19 126	56
24 13 29 10 63 63 63	32.7	9 13 7 2 2 4 2 5 7	23.0	5 1 0 6 3 8 11 11	5.2			4 14 7 7 1 10 8 13	28.2	21 6 10 4 8 3 49 10	22. 4
22 43 67 1 67 2 67 67	20	444 39 448 7 32 8 81 37	46	28 4 3 8	18		:	52 44 51 7 36 11 119 48	65	119 119 119 119 119 119 119 119	38
2496	-	0020	0	5182	10		:	15 10 11 11 11	4	22200	20
8 27 49	25.	16 17 12 12 21	17.	21-12	6,			181 144 144 144 144 144 144 144 144 144	23.	61 13 14 19	13.
112 112 93 127	87	53 114 68 36	89	6 2 1 2 1 2 3 8 4 8	20		:	59 126 87 79	88	30 125 20 20	62
00/004	28.1	87-45	22.5	0540	6.3			8 4 8 81	28.8	9110	20.1
2 3 3 4 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8		117	1	13.63.2				240		2389	1 1
228 58 58 70	91	17 164 143 6	83	120 488 27	20			284 284 191 33	133	187 104 1	75
2 0 52 0 17 11 18 3	22. 5	44 4 42 6 42 14 1 11	22.8	1: 5 26 6 12 6 6 8	11.6			55 4 8 8 3 3 4 8	34.4	1 12 46 12 30 10 0 4	19.8
252 501 333 581	417	324 346 263 227	290	47 136 80 176	110	30 66 66 22 66	31	401 548 349 425	431	162 383 283 260	200
115	2.7	819018	3.0	1010	00	0000	4.9	13 8 6 13	00	112 6	9.
116 124 132 197	142	133 104 89 85	103	19 31 24 60 60	33	21 4 1 2	1	164 140 114 1147	141	65 111 79 101	83
Total crop— 1912. 1913. 1914.	Average	28, tree No. 23-75-24, Sporting strain: Orchard grade—1912. 1913. 1914. 1915.	Average	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912. 1913. 1914.	Average	Total crop— 1912. 1913. 1914.	Average	29, tree No. 23-75-22, Valencia strain: Orchard grade— 1912. 1913. 1914.	Average

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

əldsi	isv jo .siiu	Number				:	271 274 44	21		:
	nuinder Jiuri rəq	Average Seeds	5.33 5.33 5.33	4.67	2.67 3.67 3.00 3.33	3.17	3.22 4.22 3.56 4.33	3.83	0 3.00 3.67 6.00	3.17
	٦.	Number.	0000	0			0000	0	0000	0
	80 and larger.	.tdgisW	Lbs. oz. 0 0 0 0 0 0	0			0000	0	0000	0
		Number.	0000	0			0000	0	10000	н
-	96	Weight.	Lbs. oz. 0 0 0 0 0 0	0			0000	0	8000	0.0
		Number.	2000	2			0000	က	41000	4
	112	Weight.	Lbs. oz. 3 2 0 0 1 4	1.1			5 10 0 0 0 0 1 4	1.7	8000 4000	2.1
		Number.	2004	2		:	9007	3	2000	1
	126	Weight.	Lbs. oz. 1 2 0 0 2 0	1.1			3 0 0 0 0 0 0 0 0 0 0	1.8	2 14 0 0 0 0	0.7
		Number.	16 0 1 8	9		:	41 1. 24 24	17	50	13
. ,	150	Weight.	Lbs. oz. 8 3 0 0 0 8 4 1	3.2			20 10 0 8 1 0 11 9	8.4	26 0 0 0 0 0 0	6.6
-		Number.	15 0 4 31	13		1	35.4.00	28	13	9
Sizes.	176	Weight.	Lbs. oz. 7 0 0 0 0 2 0 0 13 6	5.6			16 2 1 13 2 7 29 12	12.5	6 0 0 0 1 14 3 0	2.7
02		Number.	37 0 13 54	26			90 32 180	82	20 15 49	26
	200	Weight.	Lbs. oz. 14 15 0 0 5 4 20 15	10.3			36 5 10 4 13 7 70 9	32.6	8 5 14 7 15 18 4	10.1
		Number.	22 24 41.	18		1	14 14 94 97	56	20 33 64	30
	216	Weight.	Lbs. oz. 8 0 0 11 2 9 14 0	6.3			14 12 14 7 16 11 33 8	19.8	1 10 6 14 13 2 21 6	10.8
		Number.	27 14 20 36	24			57 139 92 56	98	7 70 97 103	69
	250	.thgie™	Lbs. oz. 9 0 4 3 6 9 10 10	7.6			18 9 42 13 32 4 17 2	27.7	2 5 21 12 34 10 31 8	22.6
	nd er.	Number.	80 80 00	46			40 276 157 10	121	4. 186 160 82	108
	288 and smaller.	Weight.	Lbs. oz. 8 13 18 14 13 12 2 0	10.9			10 9 65 10 44 6 2 4	30.7	1 0 45 11 46 6 22 6	28.9
		Number.	157 105 98 185	136	29 7 14	28	348 550 338 459	424	122 292 312 305	258
	Total.	.tdgisW	Lbs. oz. 60 3 23 12 30 10 68 10	45.8	11 4 13 1 2 2 3 2	5.1	137 6 140 4 111 5	140.5	60 0 80 10 103 15 96 8	85.3
	Rank, tree number, strain,	Grade, and John Bridge	29, tree No. 23-75-22, Valencia Strain—Continued. Straidard grade— 1912. 1913. 1914.	Average	Cull fruits— 1912. 1913. 1914.	Average	Total crop— 1912. 1913. 1914.	Average	30, tree No. 23–91–2, Vaiencia strain: Orchard grade— 1912. 1913. 1914.	Average

: : : : !	:		:	. 8 4 9 8 .	53		1:1	::::	: [::::	:
2.00	3.25	.33 1.67 4.00	1.92	2. 22 3. 11 5. 67	2.78	. 67 2.00 6.00	3.17	2.33 6.33	3.92	6.33 2.33 2.33	2.83
0000	0	: : : :		0000	0	0000	0	0000	0		
0000	0			0000	0	0000	0	0000	0		
0000			:	0000		0000		0000	-		
0000	0			7000	1	0000	0	0000	0		
0000	0			8000	0.9	0000	0	0000	0		
10000	-			6000	2	4000	4	9000	2		
0000	0.8			000 000 000	2.8	8000	2.1	9000	0.8		
4000	-		:	6000	63	5000	60	0000	0		:
8000	70			1000	က	1000	4	0000	0		
8000	0.			10000		7000	1.	0000			
19	53		:	69 1 0	18	0,0100	17	4000	9		
0000	2.5			36 00 00 00 00 00 00 00 00 00 00 00 00 00	9.1	30 0 0 0 0 0 0 0 0	80.00	1000	3.2		
177 1 1 1 1 6	2		:	30 0 13 8 13	13	1255 18 44 8 3 8 44	30	12009	1		
10 410	-			1020	6	2406	73	0000	2		
×0-101	က်			41082	70	257	13	0000	65		
25 0 9 17	13	9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		45 115 27 66	38	77 25 111	64	25 11 12	13		
00000	5.2			315	15.3	0 0 44 7	25.5	7 10	5.1		
00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10		:	0 18 1 5 6 11 2 24		22 117 29 43 43 43	-	00004	6		
1338	15		:	01284	45	82232	49	2222			
2 4 0 6 4 14 13 0	5.1			3 14 7 4 18 0 34 6	15.9	23 14 9 23 14 4 9 24 14 4 9	18.1	2 7 0 11 1 14 7 9	3.1		
241 55 79	31			12 84 122 182	100	111 105 32	58	9 17 17 42	22		
12.	9.5			-2	32.1	0.6118	0.0	5122	6.8		
			-:	255		253 37 10	1	125.52			:
113 85 86 86	72			299 245 245 168	180	850 110 110	49	105 32 22	41		
0 22 20 8 0 4 3	16.3			1 8 68 11 67 10 42 11	45.1	0 12 17 8 33 6 3 6	00	22 22 15 8 8 6 5 8	9.6		
83 128 136 226	143	68 888 19 26	50	273 508 467 557	451	236 250 327 274	+	96 127 66 103	86	45 145 5	26
1328	-	9811	.5	1332	6	8288	10	0 8 4 2	00	9 4 6	7.3
38 27 40 66	43.	32 0 33	Ξ.	132 115 146 146 165	139.	107 80 117 104	101	88888	31.8	169	5.
Standard grade— 1912 1913 1914 1914 1916	Average	Cull fruits— 1912 1913 1914 1916	Average	Total crop— 1912. 1913. 1914.	Average	31, tree No. 23–93–5, Valencia strain: Orchard grade— 1912. 1914.	Average	Standard grade— 1912 1913 1914 1916	Average	Cull fruits— 1912 1913 1914 1916	Average

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

riabl e	of Val	n Number	80-68	8	1311	:				:
	number fiuri rod	Average seeds	1.22 3.33 4.89	3.31	3.33	3.09	1.67 4.67 3.33 5.67	3.84	1.67 4.33 1.67	3,00
	E. T	Number.	0000	0	1000	0.3	0000	0		
	80 and larger.	Weight.	Lbs. oz. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.3	0000	0		
		Number.	0000	0	8000	-	0000	0		:
	96	Weight.	Lbs. oz. 0 0 0 0 0 0 0 0	0	0000	0.5	0000	0		
		Number.	8000	5	10000	2	0000	0.5		
	112	Weight.	Lbs. oz. 111 9 0 0 0 0 0 0	2.9	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.1	4 0 0 0 0 0 0	0.1		
		Number.	0000	63	10100-	ಣ	0000	-		
	126	Weight.	Lbs. oz. 5 11 0 0 0 0 0 0 0 0	1.4	2 11 2 15 0 0 0 8	1.5	1 12 0 0 0 0	0.3		
		Number.	802	23	. 94 0 12	50	4400	2		1
	150	Weight.	Lbs. 02. 43 0 1 0 0 0 4 0	12.0	23 10 7 3 0 0 9 9	10.1	4808	1.1		
		Number.	582.03	37	141 18 59 59	31	4000	20		
Sizes.	176	Weight.	Lbs. 02. 35 2 7 14 1 6 22 5	16.7	18 15 8 5 3 0 25 1	13.8	1 15 1 0 0 0 2 10	1.4		
		Number.	96 46 33 123	92	65 52 36 155	22	000000000000000000000000000000000000000	12		
	200	Weight.	Lbs. oz. 39 7 17 15 16 14 48 1	30.6	26 15 20 11 16 1 58 5	30.5	3 10 0 14 1 1 4 13 1	4.7		
		Number.	897	28	16 36 62 57	43	377	Ξ		
	216	Weight.	Lbs. oz. 7 0 11 15 34 12 31 7	21.3	5 14 12 8 18 12 18 12	15.6	2 5 2 4 1 13 13 2	4.9		
		Number.	20 102 122 74	79	100 20 20	52	5 25 75	27		
	250	Weight.	Lbs. oz. 6 8 31 9 43 5 23 6	26.2	6 9 20 5 36 15 5 14	17.4	1 10 1 12 7 11 24 0	× ×		
	- L'a	Number.	7 175 142 33 33 33 3	68	201 80 80 90 90 90	52	42364	35		
	288 and smaller.	Weight.	Lbs. oz. 1 14 40 7 41 12 8 14	23.2	0 15 30 2 1 10	14.0	4 5 12 11 5 15 10 10	→ ∞		
		Number.	372 407 382	396	2004 3002 319	280	46 77 53 195	93	12 X X Z Z	28
	Total.	.tdgis77	768. 02. 116. 12. 113. 8 1140. 5 138. 7	139.8	2 6 9 9 5 5 11 9 11 4 4 11 11 11 11 11 11 11 11 11 11 11	104.7	19 1 19 1 16 11 61 15	29.9	22 3 3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	10.4
	Rank, tree number, strain,		31, tree No. 23-93-5, Valencia Strain—Continued. Total crop. 1912. 1913. 1914.	Average	32, tree No. 23-85-10, Valencia strain: Orchard grade— 1912. 1913. 1914.	Average	Standard grade————————————————————————————————————	A verage	Cull fruits— 1912 1913 1914 1914	Average

0000	4	} ::::	:		1 :		1 :	152 6	00		
1.33 4.22 4.11 3.56	3.31	. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.	3.16	1.00	3.08	2.33 2.33 5.00	3.42	1.22 2.89 5.22	3.22	. 67 6.00 6.33	4.33
1000	0.3	0000	0	0000	0.5		Ī	0000	0.5	0000	0
0000	0.3	0000	0	0000	0.5			0000	0.4	0000	0
8000	-	2000	2	0000	0			1000	03	H000	0.3
0000	. o	2000	1.3	0000	0			0000	1.3	11 0 0 0 0 0 0 0	0.2
0000	82	. 2100	4	0000	00			02120	9	10000	-
4 4 4 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.4	7 14 0 11 0 0 0 0	2.1	0100	1.6			13 2 0 11 0 0 0 0	00.	2000	0.0
8201	4	0048	က	900-	2		-	910-18	10	0000	2
4 7 2 15 0 0 0 8 0	2.0	2001 0001	1.8	0000	1.0			8 14 0 0 0 0 1 10	8.5	0000	1.0
20 24 24	22	252	17	1710	9			27.4.1.21	23	01-01	11
25 14 7 11 0 0 11 1	11.2	27 3 1 9 0 0 5 10	8.6	11 7 0 9 0 9 0 0	3.1			38 10 2 2 0 9 5 10	11.7	0000	5.3
45. 20 65	34	44 4 6 6 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	16	00000	4			34 4 6 6 18	20	54 0 0 0	16
20 14 9 5 3 0 27 11	15.2	11 0 1 14 8 1 8 8 11 6	7.2	4 14 0 0 0 2 3	1.8			15 14 1 14 4 8 13 9	9.0	24 6 0 8 0 0 3 15	7.2
73 39 188	89	38 17 30 121	52	4-1-10	20			52 18 31 126	22	80 17 6 6	43
30 9 21 9 17 5 71 6	35.2	15 6 6 13 13 12 47 0	20.7	5 13 0 7 1 15	2.2			21 3 7 4 14 3 48 15	22.9	32 0 6 11 2 8 26 8	16.9
22 44 67 94	99	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	46	00 T T T T T T T T T T T T T T T T T T	9			17 61 95	52	85 85 85	49
8 3 14 12 26 15 31 14	20.4	3 3 11 14 24 15 27 10	16.8	3 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.2			6 8 11 14 25 5 32 9	19.1	12 15 11 12 14 13 29 4	17.2
124	62	955 68 68	20	4 4 5 2 6	10.			99 118 94	80	25 4 4 4 4 6 7 7 8	19
21011	2	12 10 13 1	7 .	9 4 5 0	1.			00000	00	450 A	2.
822 44 22 82 82 82 82 82 82 82 82 82 82 82 82	36	241	23		60			231 23	26	21 15 15	19
151 161 119 47	98	190 180 180 43	104	302.29	33			266 205 73	137	13 110 288 27	110
36 12 4 12 4	22. 4	0 4 45 4 44 6 11 10	25.4	0 7 13 9 6 12 7 6	6.9			0 11 58 13 51 2 19 0	32. 4	3 7 26 13 79 14 7 9	29.4
267 450 368 518	401	158 343 393 353	312	75 35 81	69	32 43 16 12	26	265 470 444 446	406	266 235 427 239	292
117 6 123 3- 130 7 185 6	139.1	77 3 98 2 129 15 125 5	107.6	35 13 17 5 11 2 25 0	22.3	15 2 3 9 14 4	× ×	128 2 119 0 143 6 164 9	138.8	108 13 68 2 129 11 83 0	97.4
Total crop— 1912 1913 1914 1915	Average	33, tree No. 23-87-6, Valencia Strain: Orchard grade— 1912 1913 1914	Average	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912: 1913: 1914: 1915.	Average	Total crop— 1912. 1913. 1914. 1915.	Average	34, tree No. 23-91-5, Valencia Strain: Orchard grade— 1913. 1914.	Average

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

	per fruit	Seeds	00	EE	30330	17	89 89 68 89 1	28 2	33 33 00 67	75
0 .	ıəquinu	Number.	0000 -1.73.4.6	0 4.	2,0,4,0	4.	-170,470	0 4.	0000	0 3.
	80 and larger.	Mimber		0			0000	0	0000	0
	180 181	Weight.	Lbs.c 0 0 0 0				0000		0000	
		Number.	0000	0		:	-000	0.3	8000	-
	96	Weight.	$\begin{array}{c} Lbs.oz. \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{array}$	0			0000	0.3	0000	25
		Number.	0000	ಣ		:	2000	4	4000	-
	112	Weight.	Lbs.oz. 5 14 0 0 0 0 0 0	1.5	4 1 0 1 4 1 0 1 1 1 1 1 1 1 1 1 1		**************************************	2.1	0000	9 0
		Number.	8000	0.5			0000	C2	9700	0
	126	Weight.	Lbs.oz. 1 1 0 0 0 0	0.3			4 14 0 0 0 0 0 0	1.2	8000 7000	10
		Number.	000%	9		1	89-10-	16	10000	10
	150	Weight.	Lbs.oz. 11 15 0 0 0 0 0 0	3.0	0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		31 15 0 9 0 0 0 8	8.3	22 22 20 0 0 4 10	7 0
		Number.	15	10		:	69 1 13	21	52 9 0 34	0
Sizes.	176	Weight.	Lbs.oz. 7 0 0 0 0 0 1 11	2.2	8 0 1 0 8 1 0 0 9 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0		31 6 0 8 0 0 5 10	9.4	24 4 4 2 0 0 14 15	10 01
		Number.	36	=			116	54	67 45 6 117	0
	200	Weight.	Lbs.oz. 14 11 0 6 0 6 1 15	4.3			46 11 2 14 28 7	21.3	28 118 7 45 14 45 14	0.00
		Number.	34 2 1 16	22		1	36 39 101	62	26 19 37 68	00
	216	Weight.	Lbs.oz. 12 7 0 11 0 6 5 8	4.8			25 6 12 7 15 3 34 12	21.9	9 13 6 15 23 2	19 61
		Number.	11 11 32 32	17			83 104 81	182	120 120 36	, c
	250	Weight.	Lbs.oz. 5 0 3 6 2 12 9 6	5.1			14 4 25 3 35 4 24 10	24.9	6 11 11 11 14	10.01
	p :	Number.	116 88 37	64		1	22 226 374 64	173	8 53 15 15	100
,	288 and smaller.	Weight.	Lbs.oz. 4 4 4 25 11 20 12 9 2	15.0			7 11 52 8 100 10 16 11	44.4	2 6 112 10 4 0	11 00
		Number.	151 130 97 98	118	255 1855 1855 1855 1855 1855 1855 1855 1	35	445 433 549 351	445	227 164 573 28 (110
	Total.	Weight.	Lbs. oz. 62 4 36 2 24 4 27 10	36.1	10 11 3 10 3 3 4	5.2	181 12 101 14 157 2 113 14	138.7	100 9 55 6 173 11 103 13	1001
	Rank, tree number, strain, grade, and year.		34, tree No. 23-91-5, Valencia strain—Continued. Standard grade—1912. 1912. 1914. 1915.	Average	Cull fruits— 1912 1913 1914 1915	Average	Total crop— 1912 1913 1914 1914	Average	Strain: Orchard grade— 1912 1913 1914 1915	A TOWORD

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2.33 1.67 5.67 3.33	3.25	1.33 2.33 4.00	2.58	1.56 2.22 4.33 4.67	3. 20	1.33 3.67 5.67	3.17	3. 67 5. 67 5. 67	3.17	. 67 3.00 3.67	2.92
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0000				0000		0000		0000			
0000	0			8000	1	8000	0.5	0000	0.		
0000	0			0000	0.5	0000	0.3	0000	0		
0000	2			1000	က	1000	22	2000	8		
1000	1.0			1000	9	2000	9 :	4000	∞.		
4000				9000	_	9000		000			
0100	0.3			0000	83	80.00	0.5	10000	-		
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0000	0.7			26 7 4 10 0 0 14 15	11.5	88 11 0 1 0 11 0 11	4.7	11 6 0 0 1 6 3 14	4.2		
<u>Б</u> 446	20			80 46 7 123	64	19 10 25 97	38	23 111 16	22		
41.50	60			7-411	-	4004	6.3	∞ 2. 4. c.	5.3		-
9000	2			48228	26	7 4 11 98	14.	0040	413		
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4 10 0 0 0 0 5	2.5			14 7 6 15 14 6 28 7	16.1	11 1 11 5 22 0 31 12	18.3	8 4 1 9 2 5 10 15	5.8		
25.	12			23 131 60	64	64 102 73	09	9 25 74	29		
24 24	oc			45588		12890	0.0	H40010	9.0		-
-1005-	8			7 2 4 8 E E E E E E E E E E E E E E E E E E	21	28820	20	22 8 23			
8888	38			111 116 475 35	159	1111 1113 40	99	7 115 54 37	53		
0 15 12 12 14 14 16 15	8.5			3 5 25 6 30 11 8 14	42.1	0 2834 11 282 282	19.0	25 2 14 10 9 6	12.8		
65 77	02	28 24 10	28	318 289 674 355	409	95 224 316 321	239	133 128 101 168	233	24.00 m	37
15.738	1.5	1736	6.0	1-90m	6	9 47 0	3.9	2221	1-1	44801	5.3
29 119 19	21	23,000,00		142 78 196 126	135	46 66 112 110	28	29 29 25 25	4	02 41 2	
Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1915	Average	Total crop— 1912 1913 1914 1915	Average	38, tree No. 23-51-8, Valencia strain: Orehard grade— 1912 1913 1914	Average	Standard grade— 1912 1973 1914 1915	Average	Cull fruits— 1912 1913 1914 1915	Average

TABLE 1.— Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

H 4 4 1 2 1	00		:			::::	:	100	3		
. 33 3. 11 3. 00 4. 67	2.78	. 4. 00 2. 00 3. 33	3.17	1.67 5.33 4.67	4. 09	6.00 6.00 7.33	3.17	5.11 5.11 4.11	3.47	1.33 3.67 6.67	3, 83
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0000	0	0000	0	0000	0			0000	0	0000	0
2000	9	8000	-	0000	0		-	8000	-	H000	0.3
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16		1000	_	0000				1000	-	0000	
40 10 0	10	1000	8	1000	4			22000	7	6000	2
24 12 0 9 0 0 0 0	6.3	9000	1.6	4000	2.3			15 11 0 0 0 0	3.9	2000	1.3
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0000	8.0	155		8000	0.3			1000	1.4	1000	2.0
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377	13	61 0 7	120	0001	=			101	28	252	8
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25 24 24	22	53 0 31	23	800%	00			75 75 0 39	30	44 2 2 2 4 2 2 4 2 2 4 2 2 4 2 2 4 2 2 4 2 2 4 2 2 4 2 2 4 2 2 4 2	25
2 2 2 2	0.3	110011	2.2	10000	3.5			4808	-	15 17 9	0
12 3 15 10	10	130033	101	0008			:	34 34 17	12	19 0 19 19	=
23 73 137	61	29 37 4 130	20	20113	14			64 38 150	64	41 41 50 142	69
3 14 8 10 32 2 51 14	24.1	11 11 14 5 1 14 50 11	19.6	14 13 0 6 0 7 7 11	50.00		3 2	26 8 14 11 2 5 58 6	25.5	16 15 14 22 14 25 25 25	27.5
98 772 136	63	836 23 63 24 1	35	9 1 29 29	11		-	17 35 17 37 92 5	45	15 15 17 10 10 10 10 10 10 10 10 10 10 10 10 10	299
£ 44 £ £	4	41044	7	,x=0n	00			100	.5	22504	9
22 52 45 45 45 45 45 45 45 45 45 45 45 45 45	22	21142	12	1001				92142	16	283.55	20
91 84 146	81	99 97 42	61	4868	12			107 106 70	73	137 137 54 42	61
0 5 28 0 29 14 44 2	25.6	1 11 10 14 34 4 13 11	15.1	8 113 6 5 1 1 1 3 1 1 3 1 1 1 1 1 1 1 1 1 1 1 1	30.00			3 0 13 4 37 1 22 6	18.9	2 12 2 2 2 2 2	19.8
235 77 79 4	86	137 137 17 17	66	65 37 18	31			202 276 35 25 35	_	1 1 1 1 2 2 8 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1	
	3		6		10				130	133 48 9	48
0 53 10 22 20 8	24.	0 4 33 0 69 12 4 11	26.9	1 4 13 15 8 14 14 2	9.6			1 8 46 15 78 10 8 13	34.0	0 4 34 7 15 0 2 8	13.1
201 462 348 541	388	178 314 376 291	290	132 77 50 104	91	522	23	342 443 429 400	404	183 379 235 336	283
8481	134.3	15225	96.4	1221	32.4	113	5.1	11.000	9.9	2 8 2 1 4	5.1
1133	13	82 120 108	6	63		15.00		161 95 134 144	133	82 1117 92 127	105.
Total crop— 1912 1913 1914 1915	Average	38, tree No. 23-90-10, Valencia strain. Orchard grade— 1912. 1913. 1914.	Average	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912. 1913. 1914.	Average	Total crop— 1912. 1913. 1914. 1915.	Average	39, tree No. 23-76-17, Valencia Strain: Orchard grade— 1913 1914 1914	Average

Table I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

əldsi.	of var	Number		:		;	0024	82	:::::	:
	number Tiuri rəq	9ggrayA sb99s	0.33 4.00 4.00 4.67	3.25	0 4.67 3.00 4.00	2.92	. 71 4. 11 3. 56 5. 11	3.33	2.9.9. 4.6.00 7.000	3, 59
	G.	Number.	0000	0			0000	0	0000	0
	80 and larger.	Weight.	$\begin{array}{c} Lbs.oz. \\ \cdot & 0 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \\ \end{array}$	0			0000	0	0000	0
		Number.	0000	0 .			1000	0.3	0000	0
	96	Weight.	$\begin{array}{c} Lbs.oz. \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{array}$	0			0000	0.2	0000	0
		Number.	0000	0			0000	2	0000	0
	112	Weight.	Lbs.oz. 0 0 0 0 0 0	0			2000	1.3	0000	0
		Number.	1001	0.5			2000	4	0000	0.5
	126	Weight.	$\begin{array}{c} Lbs.oz. \\ 0 & 9 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \\ 0 & 8 \\ \end{array}$	0.3			6 11 0 0 0 0 2 9	2.3	0000	0.3
		Number.	0000	2			61 0 24 24	22	16000	5
	150	Weight.	$\begin{array}{c c} Lbs.oz. \\ 4 & 9 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{array}$	1.1			30 9 0 0 1 10 11 4	10.9	8008	2.6
		Number.	8000	3		:	52 10 47	82	20.02	10
Sizes.	176	Weight.	Lbs.oz. 3 14 0 0 0 15 0 15	1.4			23 13 0 7 4 13 20 6	12.4	7 0 15 1 8 8 14.	4.6
02		Number.	16 0 20	10			57 41 55 162	13	27 18 9 31	21
	, 200	Weight.	Lbs.oz. 6 8 0 0 2 3 7 10	4.1			22 12 15 14 25 1 62 12	31.6	10 12 7 8 3 13 12 8	8.6
		Number.	400%	6		I	19 69 74 98	65	22 9	20
	216	Weight.	Lbs.oz. 1 10 0 10 0 12 9 10	3.2			6 12 23 15 30 6 33 14	23.7	8088 7.7.44	7,3
		Number.	4212	18			13 152 69 79	78	17 37 32 2	22
	250	Weight.	Lbs.oz. 1 6 4 7 5 1 11 0	5.5			47 14 24 13 24 2	25.2	5 3 11 12 11 12 0 9	7.4
		Number.	139 92	59			225 57 22	22	32 1. 1.	24
	288 and smaller.	.tdgisW	Lbs.oz. 0 15 20 6 2 4 2 4 2 14	6.6			1 3 54 13 17 4 5 6	19.7	1 0 8 7 16 14 0 3	6.6
		Number.	45 109 33 101	72	120000	20	230 551 271 450	376	93 116 122 81	103
	Total.	Weight.	5bs. oz. 19 7 25 7 11 3 32 7	22.1	0 5 4 11 0 8 2 7	2.0	101 14 147 10 104 7 162 12	129.2	35 35 34 34 8	37.4
	Rank, tree number, strain,	Brauc, and Jean	39, tree No. 23-76-17, Valencia strain—Continued. Strain—Continued. 1912 1913 1914 1914	Average	Call fruits— 1912 1913 1914 1914 1915	Average	Total crop— 1912 1913 1914 1915	Average	40, tree No. 23-70-18, Corru-gated strain: Orchard grade— 1912 1913 1914	Average

!!!!!				116 202 155 146	155		:		:		:
1.33 4.33 1.67 2.00	2.33	0 4.00 2.67 2.00	2.17	1.11 3.67 3.11 2.89	2.70	4.33 4.33	2.33	3.33 3.33 2.33	2.67	0 1.67 4.67 1.67	2.00
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				4 151 0 8			9 1	179	:		
26 6 1 13				43		1 1 1 0 0 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	2.6	49 12 2			
291 263 253 188	249	0.00	11	384 414 379 272	362	74 65 55 40	59	386 362 329 108	296	130	6
120 1 77 5 87 15 74 4	89.9	0000	8 0	155 1 117 14 130 6 109 4	128.1	28 12 22 12 18 8 17 6	21.8	137 15 124 13 103 15 44 2	102,7	1220	1.3
Standard grade— 1912 1913 1914 1915.	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912 1913 1914 1914	Average	11, tree No. 23-87-7, Corrugate Strick Strinn: Orchard grade— 1912. 1914.	Average	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912 1913 1914 1914	Average

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive— Con.

ldain		Number	1110	122.83	91						
0 J	numbe per fruit	9ga197A sh99s		2.23	2.33	2.67 2.00 5.67 5.67		2.67 2.67 3.67 3.67	3,17	0 1.67 4.67 4.67	2.78
1	ون ان	Number.		00		0000	0	0000	0		:
	80 and larger.	Weight.	Lbs.oz.	0 0		0000		0000	0		
		Number.	1	10		8000	-	0000	0		
	96	Weight.	Lbs.oz.	0 0 0 0 11		1 15 0 0 0 0		0000	0		
		Number.		50		000-	4 00	900-	2		
	112	Weight.	Lbs.oz.	0 0		0000		2000 5000	1.1		
	1	Number.	:	00		4000	2 23	2002	-		:
	126	Weight.	Lbs.oz.	0 0 5 1		8006	10	1001	0.5		
		Number.	:	-2		28	9 9	8004	6		:
	150	Weight.	Lbs.oz.	0 8 8 6 2		13 15		15 0 0 0 1 0 0 0	4.4		
- 1		Number.			1:1	27-53	9 =	27 1 10 16	11		
Sizes.	176	Weight.	Lbs.oz.	1 6 61		10 0 15 0 15 7 8 8		12 12 0 0 7 2 2	5.1		
20		Number.		14		82128	27	2008	- S		
	200	Weight.	Lbs.oz.	6 0 11 12		7 14 60 0 0 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		18 0 0 0 1 0 0 0 2	7.4		
		Number.	:	45		72 45	27	2125	14		
	216	Weight.	Lbs.oz.	8 13		2 7 9 10 17 10	~	2001 2000 2000 2000 2000 2000	5,0	8 · · · · · · · · · · · · · · · · · · ·	
		Number.	7	120		98.6	- ' -	100 110 37 37	19		
	250		Lbs.oz.	00		044	7.5	1222	5.7		
		Weight.	Lbs	= °		272.83	17	2012			
	nd er.	Number.		201		198 227	108	126 56 56 14	53		
	288 and smaller.	Weight.	Lbs.oz.	55 15 2 4		0 4 47 6 64 13	1 -6	25 15 13 11 3 2	12.0		
		Number.	460	446 397 151	364	331	239	152 138 76 136	126	32 125 9 6	2
	Total	.tdgis77		121 8 121 8 62 8 8 8	125.8	46 3 91 13 121 9	20	66 11 29 10 20 1 48 0	41.1	11 13 12 1 13 1 13 1 13 1 1 13 1 1 1 1 1	5.5
	Rank, tree number, strain,		41, tree No. 23-87-7, Corrugate strain—Continued. Total crop—	1913. 1914. 1915.	A verage	42, tree No. 23-89-2, Valencia Strain: Orchard grade— 1913:	A verage	Standard grade— 1912. 1913. 1914.	Average	Cull fruits— 1912. 1913. 1914. 1914.	A verage.

16		1 .	[]	1 .			HOH8	-		
45							1000			
3.04	0 2.00 2.67 4.00	2.17	1.00 5.00 3.33	2, 42	1.33 2.33 1.67 2.67	2.00	1.78 3.11 3.33	2.19	3.2.2. 3.00 0.00 0.00	2.25
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0	0000	0	0000	0			0000	0	0000	0
-	0000	200	0000	0			0,000	8	9000	2
0.5	41000	1.7	0000	0			14.00	1.7	1000	1.0
1		===	11	+1		1:				63
1			II II							4
2. (9 10	2.8	8000	2.			81 00 00	4	0000	1, 4
m	4000	00	2040	2			2108	4	9001	2
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18	18 22 22	12	100	9			25 57	18	20 33 31 12	10
9.5	98 411	6.2	2000	3.0			11.8811	9.5	10 10	4.7
<u> </u>	1			_				<u> </u>	01110	
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10.0	2 12 9 8 22 9	9.2	4000	2.6			28 11	11.9	9 0 2 11 5 9 10 0	.6.8
44	14 46 33 160	63	∞ co ⊣ ∞	œ			22 49 34 178	7.1	23 24 36 40	31
6.71	2140	25.7	462	3.0			9 6 11 6 0 6	200.2	00000	12.6
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7.1	0 777 29	49	24 112 33	18			1112 89 62	67	5 80 39 15	35
3.5	0 4 4 6	16.0	15 15	5.6			0 1 3 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	21.6	1221	11.3
-				00				_		
16	4.60	4	1-4-	3			1			39
40.4	0 4 111 15 27 5 5 13	11.3	0 4 17 6 11 11 3 5	8.2			29 5 39 0 39 0 29 2	19.5	0 9 27 4 11 0 0 12	9.6
408	70 277 353	240	62 113 63 120	06	11 8 01	19	143 419 348 483	348	93 257 168 115	158
25.4	3157	91.0	1 7 0 0 1 13	30.6	7 1 3 13 1 10 2 4	3.7	5 15 0 15 2 4	25.2	5 12 6 14 4 3	57.7
1,					1		122	1		
Average	43, tree No. 23-93-8, Valencia strain: Orchard grade— 1912. 1913.	Average	Standard grade— 1912 193 1914 1915	Average	Cull fruits— 1912. 1913. 1914. 1915.	Average	Total crop— 1912. 1913. 1914. 1914.	Average	44, tree No. 23-90-7, Sporting strain:	Average
	125.4 408 40.4 161 23.2 71 14.8 41 17.9 44 10.0 22 9.2 18 1.3 3 2.6 4 0.5 1 0 0 3	125.4 408 40.4 161 23.2 7 16.0 22 9.2 18 1.3 3 2.6 4 0.0 10.0 22 9.2 18 1.1 3 9.0 16 1 0	125.4 408 40.4 161 23.2 7 16.0 20.0 41.0 17.9 44 17.9 44 17.0 22 9.2 18 1.11 3 9.10 16.0 10 0 0 0.0 <td>125.4 408 40.4 161 23.2 7 70 0 4 1 17.9 44 10.0 22 9.2 18 1.3 3 2.6 4 0.5 1 0</td> <td>155.4 408 40.4 161 23.2 7 70 0 4 17.9 44 10.0 22 9.2 18 1.3 3 2.6 4 0.5 1 0</td> <td> 125.4 408 40.4 161 23.2 71 14.8 41 17.9 44 10.0 22 9.2 18 1.13 3 2.6 4 0.5 1 0 0 0 0 0 0 0 0 0</td> <td> 125.4 408 40.4 161 23.2 71 14.8 41 17.9 44 10.0 22 9.2 18 1.3 3 2.6 4 0.5 1 0 0 0 0 3.04 37. 7 70 0 4 1 0 0 0 0 12 2 2 4 2 12 2 8 5 1 11 3 9 10 16 6 14 10 0 0 0 0 0 0 38.7 2 2 2 2 2 2 2 2 2 </td> <td> 129.4 408 404 161 23.2 71 14.8 41 17.9 44 10.0 22 9.2 18 1.3 3 2.6 4 0.5 1 0 0 0 0 0 0 0 0 0</td> <td> 186. 4 408 404 404 401 23.2 77 14.8 41 17.9 44 10.0 22 9.6 18 1.11 3 9.10 16 6.14 10 0 0 0 0 0 0 0 0 </td> <td> 18.4 408 404 161 23.2 71 14.8 41 17.9 44 10.0 22 52 18 13 3 2.6 4 6.5 1 0 0 0 0 0 0 0 0 0</td>	125.4 408 40.4 161 23.2 7 70 0 4 1 17.9 44 10.0 22 9.2 18 1.3 3 2.6 4 0.5 1 0	155.4 408 40.4 161 23.2 7 70 0 4 17.9 44 10.0 22 9.2 18 1.3 3 2.6 4 0.5 1 0	125.4 408 40.4 161 23.2 71 14.8 41 17.9 44 10.0 22 9.2 18 1.13 3 2.6 4 0.5 1 0 0 0 0 0 0 0 0 0	125.4 408 40.4 161 23.2 71 14.8 41 17.9 44 10.0 22 9.2 18 1.3 3 2.6 4 0.5 1 0 0 0 0 3.04 37. 7 70 0 4 1 0 0 0 0 12 2 2 4 2 12 2 8 5 1 11 3 9 10 16 6 14 10 0 0 0 0 0 0 38.7 2 2 2 2 2 2 2 2 2	129.4 408 404 161 23.2 71 14.8 41 17.9 44 10.0 22 9.2 18 1.3 3 2.6 4 0.5 1 0 0 0 0 0 0 0 0 0	186. 4 408 404 404 401 23.2 77 14.8 41 17.9 44 10.0 22 9.6 18 1.11 3 9.10 16 6.14 10 0 0 0 0 0 0 0 0	18.4 408 404 161 23.2 71 14.8 41 17.9 44 10.0 22 52 18 13 3 2.6 4 6.5 1 0 0 0 0 0 0 0 0 0

Table 1.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

əldair	of var	Number				:	104 51 111 112	95		:
	number Tiuri 19d	Average seeds	0.67 4.00 3.67 4.33	3, 17	0 2.67 4.67 2.00	2.34	2.89 3.45 3.11	2.59	3.5.33 3.67 67	2.93
	r.	Number.	0000	0			0000	0	0000	0
	80 and larger.	Weight.	$\begin{array}{ccc} Lbs.oz. \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{array}$	0			0000	0	0000	0
		Number.	00%0	-			0000	8	0000	8
	96	.tdgisW	Lbs.oz. 0 0 0 0 1 14 0 0	0.5			4 0 0 0 0 0 0 0	1.5	80 00 00 00 00	1.7
		Number.	42010	9			34	6	9+00	2
	112	Weight.	Lbs.oz. 14 5 0 0 0 10 0 0	3.9			20 0 0 0 0 0 0 0	5.3	3 0 10 0 0 0 0	1.1
	į	Number.	1002	-		:	×00×	8	1000	0.3
	126	Weight.	$\begin{array}{c} Lbs.oz. \\ 1 & 1 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{array}$	0.4			4 6 0 0 1 2	1.3	0000	0.1
		Number.	22 6 2 2 2	10	: : : :		45 5 12 17	20	19 0 4	7
	150	Weight.	Lbs.oz. 13 8 1 1 4 8. 2 8	5.4			8200x	10.1	9 4 1 9 0 0, 1 15	3.2
		Number.	14 16 30	15		1	34 27 53	30	11 9 26	12
Sizes.	176	Weight.	Lbs.oz. 6 7 0 6 7 6 13 0	6.8			15 7 3 1 12 15 23 0	13.6	4 14 3 15 0 8 11 8	5.3
		Number.	16 124 00	25			33 60 100	26	17 30 24 62	33
	200	Weight.	Lbs.oz. 6 11 0 8 10 8 23 3	10.2			16 1 9 11 27 0 38 9	22.8	6 15 11 13 10 8 23 13	13.3
		Number.	12 22 66	23	::::	:	86833	20	837 27	23
	216	Weight.	Lbs.oz. 4 6 1 15 8 2 19 8	× × × × × × × × × × × × × × × × × × ×			4 13 12 6 26 1 26 10	17.5	2 2 3 14 9 6 9 6 9	8.3
		Number	20 31 50	25			3253	09	7 75 14	48
	250	Weight.	Lbs.az. 1 12 4 3 10 3 15 0	7.8	1 1 2 1		3 6 28 14 24 5 19 12	19.1	28 6 26 6 4 8	16.0
	m si	Number.	20 mg g g g g g g g g g g g g g g g g g g	49			249 89 23 23	87	138.57	57
	288 and smaller.	Weight.	Lbs.oz. 1 10 27 11 9 2 4 12	8.01			2 3 20 2 5 8 5 8	20.7	22 0 0 4 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	14.7
	*	Number.	104 158 140 232	159	101	46	301 479 313 358	363	82 299 214 141	184
	Total	.tdgis77	Lbs.oz. 49 12 35 12 52 5 78 8	54.1	46 8 4 1 1 1 2 0	13,4	140 5 115 9 120 4 121 11	125.2	37 9 88 12 74 5 53 6	63.5
	Rank, tree number, strain,		44, tree No. 23-90-7, Sporting Strain—Continued. Straidard grade—1912. 1913. 1914. 1915.	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912 1913 1914 1915	Average	45, tree No. 23-91-7, Valencia strain: Orchard grade- 1912 1913 1914 1914	Average

::::	1:	::::	:	100 100 43 43	21	::::	1 :		;	H H H H H H H H H H	:
0.4.4.8 00.33 00.00	2.83	0.4.9 2.99 33 33 33	2.17	4.00 3.00	2.64	1.00 5.00 4.67	3.42	1.33 3.00 4.67 5.67	3.67	1.00 5.67 1.33 5.67	3.42
0000	0		1:	0000	0	0000	0	0000	0		
0000	0	1 1 1 1		0000	0	0000	0	,0000	0		
0000	0		1	2000	60	8000	5.	0000	0	1 :::::	
0000	0			0000	2	9000	0.3	0000	0		
0000				9000		1000	0	0000			
16001	4			22	9	4000	-	0000	8		
9 0 0 0 0 11	2.5			13 0 0 10 0 0 0 11	3.6	0000	0.6	51 50 0 0 0 0 0 0	1.5		
0000	2			8000	8	10000	-	8000	-		
3 12 0 0 0 0	6.0			40 00 00 00 00	1.1	2 12 0 0 0 0 0 0	0.7	11 11 0 0 0 0 0	0.2		
55042	10			46.49	17	0000	11	0302	9		
8001 2040	5.4			27 9 1 9 2 15 2 15	8.6	19 7 0 0 1 12 0 0	5.3	11 13 0 0 0 0 0 0	3.4		
26 0 10 10	101			36 37	2.3	288	101	0 8 0 8 0	1		
1008	9			0 8 2 2	8	18091	4	0000	2		
51004	4.			16236	9	2002	4	12010	60		
20 1 20 20 1 20 1	16			46 31 29 91	49	44 5 52 52	32	288	10		
11 13 0 7 2 1 11 13	6.5.			18 12 12 4 12 9 35 10	19.8	18 2 12 8 19 3	13.0	11 15 0 0 2 3 2 11	4.2		
00000	14			16 27 45 57	36	15 17 54 68	39	25 12 24 24	15		
×009	4.7			11 2 12 12	3.0	4121	0.1	4081	5.2		
10323			:	5 9 17 19	13	22 22 6 5	14	0040	1.5		
18 18 18 16 17	30		:	115 1115 1116 65	78	24 93 90	65	6 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	61.		
3 7 5 12 13 2 15 10	9.5			36 7 39 8 20 2	25.4	7 13 16 2 33 4 27 8	21.2	12222	5.6		
6 105 120 27	65			11 243 197 35	122	111 207 992 60	93	8 133 25 44	53		
1 11 22 4 30 13 6 6	15.3			3 0 55 4 53 3 8 10	30.0	2 11 50 1 28 0 16 2	24.2	1 15 28 5 6 4 10 10	11.8		
139 130 182 149	150	840 × 41	44	310 493 304	378	172 281 274 275	251	125 140 57 128	113	88800	28
07-4-0	70	0000	2.	150 27	2	24 2 0	7	20220	9.	c:480	60
90 90 90 90 90 90 90 90 90 90 90 90 90 9	49	∞ co	12	139 124 107	125.	72 74 100 87	88	26 30 19 36	35	122	70
Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912. 1913. 1914.	Average	Total crop— 1912. 1913. 1914.	Average	strain: Strain: Orchard grade— 1912: 1913: 1914:	Average	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1915	Average

TABLE I.—Detailed statement of the annual perform once of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

əldri	or var stin	Zumber n	4 T T T T T T T T T T T T T T T T T T T	10						
	number Jiuri rəq	Age1971.	1.11 4.75 3.00 5.33	3,55	.67 5.00 6.67 6.33	4.67	1.33 3.33 1.00 2.67	2.11	0 .67 1.00	.59
	٦. 'c	Zumber.	0000	0	0000	0				
	80 and larger.	.tdgis77	Lbs.oz. 0 0 0 0 0 0 0 0	0	0000	0	00			
		Number.	8000	0.5	1000	0.3	00			
	96	.tdgis77	Lbs.oz. 1 6 0 0 0 0	0.3	0 0 0 0 0 0	0.3	00			
		.Xumber.	14 0 0 0	4	8000	0.5	101			
	112	.tdgis'//	Lbs.oz. 8 5 0 0 0 0 0 0	2.1	0000	0.3	0 0 0 11			
		Number.	0000	63	0000	23	0 4			
	126	Teight.	Lbs.oz. 4 7 0 0 0 0 0 0	1.1	0009	1.6	2 5			
		Zumber.	61	17	114 6 0 18	10	10			
	150	.tdgis77	Lbs.oz. 31 4 0 0 3 7 0 0	8.7	7 5 3 0 8 14	±. ∝.	2 4 4 15			
		Zumber.	40000	17	20087	6	7 40			
Sizes.	176	Teight.	7.75.02. 25.7 0.0 4.0 2.1	7.9	8 0 0 0 13 0 13 0 13 0 13 0 13 0 13 0 13	4.0	3 11 18 2			
02		Zumber.	3252	42	83 39 39	17	36			
	200	.tdgis77	Lbs.oz. 30 1 2 0 14 11 21 14	17.2	3 2 7 7 0 14 15 3	6.7	15 11 14 6			
		Zumber.	37. 17 66 92	53	125.0	6	29			
	216	.tdgis77	Cbs.oz. 13 8 13 8 6 1 26 10 30 13	19.0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3.1	12 6 10 12		* * * * * * * * * * * * * * * * * * *	
		Zumber.	30 59 102 143	84	202	12	28	1		
	250	Teight.	Lbs.oz. 9 14 18 4 36 4 42 12.	26.8	0 10 6 4 7 1 2 0	4.0	33 10 8 10			
		Zumber.	19 I 117 I 104	145	03320	14	165			
	288 and smaller.		02. 10. 6 4 12	0	01010	×.	101	:		
	28 Sn	Teight.	. Lbs. 78 34 34 26	36	0200	25	46			
	al.	Zumber.	325 487 340 413	391	. 39 89 61 103	23	266 216 339 161	246	369	15
	Total.	.tdgis777	$\begin{array}{c} Lbs.oz.\\ 141&7\\109&15\\120&12\\126&4 \end{array}$	124.6	18 31 20 43 43 8	28.4	119 9 76 2 114 4 63 14	93.5	2 13 3 4 2 7 0 10	2.3
	Rank, tree number, strain, grade, and year.		46, tree No. 23-88-1, Valencia Strain—Continued. Total crop— 1912 1913 1914	Average	47, tree No. 23-85-7, Corrugated strain: Crehard grade - 1912 1913 1914 1915	Average	Standard grade— 1912 1913 1913 1914	Average	Cull fruits— 1912 1913 1914 1915	Average

63 158 90 135	112		:		:	::::	:	33 33 1	17		:
3. 33 3. 33 3. 33	2.45	33 1.00 4.67 4.00	2.50	1.33 4.00 5.67	3.58	1.00 1.67 1.67 1.33	1.42	. 89 3. 22 3. 22 3. 67	2.50	1.00 1.33 3.33 4.67	2.58
100	1	0000	0	0000	0	::::	1	0000	0	0000	Ô
000		0000	0	0000	0			0000	0	0000	0
00		8000	-	0000	0			8000	H	1,000	70
00		1000	0.5	0000	0			1000	0.5	8000	3.5
		8000	1_	0000			:	8000		4000	
1001	1	7000	4	10000	1 00		:	0000	70	5000	9
0 0 0 0 0 0 11		0000 1000	2.3	0000	0.8			0000	3.0	13 0 0 0 0 0 0	3.4
16	1 1	6000	22	8000	0.5		1	1000	3	70000	-
0 0 8 11		0003	1.3	1000	0.3			9 0 0 0 0 0	1.6	212 0 0 0 0	0.7
482		10738	12	9000	4			45007	16	8 100 001	==
2 4 13 13		19 11 1 2 0 0 3 6	6.1	8 11 0 0 0 0 0	2.3			28 6 0 0 3 6	8.3	17 15 0 8 0 0 2 15	5.3
60		35 4 0 15	14	8 1 0 20	1			25 4 4 23	21	17 4 5 16	Ξ
3 11 26 15		13 2 1 13 6 9	5.4	9 12 0 0 3 8	3,4			25 14 1 13 0 8 9 15	9.5	7 13 1 12 2 8 6 15	4.8
72.88		32 112 80	35	24 23 17	12		1	56 16 15 97	46	14 27 23 76	35
16 9 9 9		13 2 5 5 6 31 1	13.7	10 6 0 10 1 4 6 12	4.8		:	23 8 6 0 6 6 87 13	18.4	5 14 10 6 9 14 29 7	13.9
388		24 1 30 30 66 3	32	17 5 52	19		:	28 32 32 118 32 32	51	86 10 10 10 10 10 10 10 10 10 10 10 10 10	3,5
40		410 4 8 8	9	8 400	0			20000	67	85.40	0
13		3 11 22 22	Ξ	9 81	7.			60110	18	122 122	13
33		22 102 36	55	10 7 14 14 59	23			32 66 116 95	77	18 25 34 44	44
40 11 10 10		6 15 18 11 36 3 11 2	18.2	3 6 2 2 4 8 17 15	7.0			10 5 20 13 40 11 29 1	25.2	0 5 25 0 21 0 10 14	14.3
198		233 19 19	06	13 23 23	43			21 176 290 42	132	0 179 62 10	63
56 11		2 2 2 2 2 4 13 66 11 5 1	24.7	3 9 16 15 14 0 5 7	10.0			5 11 41 12 80 11 10 8	34.7	0 0 42 15 18 3 2 12	16.0
314 341 412 267	334	171 202 377 223	243	107 91 77 159	109	17 86 9	32	295 379 463 396	383	122 329 205 184	210
140 7 110 7 137 9 108 0	124.1	7 9 7 9 11 9 11 9 11	84.4	46 7 21 9 20 14 51 8	35.1	8 8 5 4 1 12 2 6	4.5	132 8 87 4 142 8 133 9	124.0	64 13 93 8 73 13 67 9	74.9
Total crop— 1912. 1913. 1914.	Average	48, tree No. 23-90-4, Valencia Strain: Orchard grade— 1912 1913 1914	Average	Standard grade— 1912. 1913. 1914.	Average	Cull fruits— 1912. 1913. 1914.	Average	Total crop— 1912. 1913. 1914.	Average	49, tree No. 23-76-22, Valencia Strain: Orchard grade— 1912 1913 1914	Average

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

əldai	nev lo stiu	TədmuN Tì		 _:_			6 3 41 41	18		
	nymber Der fruit	Average seeds	1.00 2.67 4.33 4.67	3.17	3.00 4.00 4.00	2,33	4.44	2.69	0 5.67 5.33	3.67
	P :	Number.	0000	0			0000	0	0000	0
	80 and larger.	Veight.	Lbs. oz. 0 0 0 0 0 0 0 0	0			0000	0	0000	0
		Number.	0000	0			12000	2	1000	0.3
	96	Weight.	Lbs.oz. 0 0 0 0 0 0	0	•		14 0 0 0 0 0	3.5	0000	0.1
		Number.	2000	00		:	32000	6	0000	7
	112	Weight.	Lbs. oz. 7 1 0 0 0 0 0 0 0 0 0	1.8			20 13 0 0 0 0	5.2	4000	1.3
		Number.	8000	0.5			0000	23	0004	2
	126	Weight.	Lbs. oz. 1 2 0 0 0 0 0 0	0.3			3 14 0 0 0 0 0 0	1.0	4000 000 000	1.1
		Number.	19	5		:	4117	16	34	6
	150	.deight.	Lbs. oz. 9 12 0 0 0 8 0 7	2.7			27 11 0 8 0 8 3 6	8.0	17 8 0 8 0 0 0 14	4.7
		Number.	407.83	6			21 29 29	17	27 1 0 9	6
Sizes.	176	.†dgisW	Lbs.oz. 1 14 0 0 3 4 9 12	3.7			9 11 1 12 5 12 16 11	8.5	12 8 0 7 3 12	5.7
01		Number.	6 19 37	16			20 29 113	51	38 28 117	200
	200	Weight.	Lbs.ioz. 2 10 0 14 7 12 14 11	6.5			8 8 111 4 17 10 44 2	20.4	16 0 10 15 3 10 43 11	18.6
		Number.	24 33	12			0.048.00	09	15 37 45 107	51
	216	Weight.	Lbs. oz. 1 2 4 1 2 8 14 23 5	8.6			3 7 14 1 31 2 37 15	21.6	6 3 113 5 35 14	18.4
		Number.	111 35 69	59			92 94 103	73	91 97 88	17
	250	Weight.	Lbs. oz. 0 5 3 9 11 14 20 10	9.1			0 10 28 9 32 14 31 8	23.4	28 22 28 38 5 26 14 3 5	24.1
	ъ.;	Number.	2 44 38 88	57			323 106 48	120	1 118 124 44	72
	288 and smaller.	.JdgisW	Lbs. oz. 0 8 29 2 11 14 8 10	12.5			0 .8 30 1 11 6	28.5	0 4 288 10 12 0 12	19.8
		Number.	49 160 130 235	144	1221	23	182 540 348 436	377	139 276 274 367	264
	Total.	.tdgis777	Lbs. oz. 24 8 34 11 44 2 77 7	15.2	5 11 3 13 1 7 3 6	3.6	95 0 132 0 119 6 148 6	123.7	64 10 82 2 94 2 123 1	91.0
	Rank, tree number, strain, grade, and year,		49, tree No. 23-76-22, Valencia Strain—Continued. Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912 1913 1914 1914	Average	50, tree No. 23-88-8, Valencia Strain: Orchard grado— 1912 1913 1914 1916	Avorage

::::	1:	::::	1:	0002	100			::::		::::	
5.33 6.32	4.42	3.33	3.08	5.35.11.89	3.72	4.67	4.00	1.67 3.33 5.67 3.67	3.58	1.00 4.67 2.67 2.67	2.75
0=00	0.3		1	0-00	0.3	0000	0	0000	0		
0000	0.2		1:	0000	0.2	0000	0	0000	0		
0000	0			H000	0.3	E000	8	0000	0		
0000	0			0000	0.2	8 14 0 0 0 0 0 0	2.2	0000	0		
21000	00		-	<u> </u>	2	4000	9	×000.	2		
4000	00		1	9000	00	8000	∞.	8000	65		
0004				1000	83	15000	8	2000			
1000	0.3		1	×000	2	0000	00	1000	0.3		
8000	0.5			4 13 0 0 0 0	1.2	5 14 0 0 0 1 2 0	1.8	0000	0.2		
8010	70		1	27-1-6	14	35 0 20	14	11000	00		
9 11 0 0 0 0 0 0	2.6			27 3 0 8 0 9 0 14	7.3	18 10 0 7 0 0 9 12	7.2	0000	1.5		
15 0 1 0	4			1 1 0	13	13 6 52	18	000ro	00		
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.0			19 13 0 7 0 8 3 12	6.1	23 0 8 11 2 2 3 2 3 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5	8.2	4002	1.6		
4089	9		i	28 11 123	54	12 49 21 147	22	700-4	5		-
70044	2			55 4 51	0	12320	8	100.70	-		
2106	2			10 10 44 45	21	19 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	23	2000	. 2		
2002	11			24 39 51 134	62	45 52 67	42	23164	6		
3 11 0 10 2 4 9 4	4.0			9 14 13 15 20 7 45 2	22.3	1 8 15 12 21 0 23 13	16.0	1 15 0 6 2 2 2	3.0		
100 113	24			101 110 110 154	92	89 89 80 80	51	14 7 23 23 23	12		
44 9 8	7.3			0000	9.4	1048	17.1	1000	00		
18 461			;	238 338 46	30	12348		H4012			
2,2,2,2,3	38			207 153 73	109	161 101	64	97 8 8	38		
0 14 18 9 7 14 7 0	8.6			1 47 3 46 0 19 0	28.3	20 44 48 14 20 14 20 14	18.2	20 E 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	8.5		
77 102 53 128	90	67 10	23	223 445 332 507	377	115 254 329 337	259	47 1117 49 73	72	18 10 4	21
37 8 23 2 16 3 38 0	28.7	3 15 6 1 2 12 2 12	3.4	106 1 111 5 111 15 163 11	123.3	62 7 80 2 1114 7 132 2	97.3	22 13 26 7 13 4 25 3	21.9	9 8 11 8 0 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	3.7
Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912 1913 1914 1914	Average	Tetal crop— 1912 1913 1914 1916	Average	51, tree No. 23-77-17, Valencia strain: Orchard grade—1912. 1913. 1914. 1914.	Average	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912 1913 1914 1914	Average

Table 1.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

əldsi	of var	19dmuV lì	# 0 0 0 10	4				:		
	number 1	Average seeds	1.00 4.22 4.33 4.22	3.44	5.00	3.50	2.67 3.33 2.33 3.67	3,00	1.33 3.33 2.00 2.67	2.33
	pj.	Number.	0000	0	. 0000	0	0000	0		
	80 and larger.	Weight.	Lbs. oz. 0 0 0 0 0 0	0	0000	0	0000	0		
1		Mumber.	E 0 0 0	3	×000	2	0000	0		
	96	.tdgieW	Lbs. oz. 8 14 0 0 0 0 0 0	2.2	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.4	0000	0		
1		Number.	32000	00	122	4	16	4		
	112	Weight.	Lhs. oz. 20 4 0 0 0 0 0 0 0 0	5.1	7 8 0 10 0 0 0 9	2.2	9 8 0 0 0 0 0 10	2.5		
		Number.	11000	co	4000	2	8000	-		
	126	Weight.	Lbs. oz. 6 8 0 0 0 0 1 2	1.9	2 4 0 0 2 14	1.3	11 11 0 0 0 0	0.4		
		Number.	46 1 20	17	120001	00	31.00.0	∞		
	150	.tdgieW	Lbs. oz. 24 13 0 7 0 0 0 9 12	00	9 11 0 0 0 0 5 8	3.8	16 6 0 0 0 0 1 0	4.3		
		Number.	21 6 6 57	21	27 27 38 38	19	24 0 18 18	=		
Sizes.	176	Weight.	Lbs. oz. 10 2 2 11 0 8 25 9	9.6	12 10 2 4 2 0 17 0	× 5.	11 10 0 0 0 0 7 12	4.8		
02		Number.	17 49 22 161	62	111 239 72	34	35 30	17		
	500	Weight.	Lbs. oz. 7 5 19 12 10 4 64 6	24.4	4 7 111 7 28 2	13.6	13 2 0 0 1 4- 13 9	7.0		
		Number.	. 221 251 90	51	24 24 24 24	21	212c.4	17		
	216	Weight.	Lbs. oz. 3 0 17 11 21 6 31 15	19.0	0 12 8 8 13 2 8 4	7.7	4 11 1 2 14 2 14 2	6.1		
		Number.	8 82 101 62	63	0 0 74 19	48	111 100 9 27	14		
	250	Weight.	Lbs. oz. 2 11 24 12 36 10 19 9	20.9	0 0 31 2 26 9 5 15	15.9	3 14 3 10 3 3 7 12	4.6		
	d.	Number.	6 182 201 18 18	102	0 184 143	82	26 26 4	42		
	288 and smaller.	.tdgisW	Lbs. oz. 1 11 41 4 58 15 5 0	26.7	, 0 43 43 9 43 0 43 0 43	21.7	0 10 28 10 6 7 0 9	9.1		
		Number.	180 422 388 414	351	83 343 276 172	219	130 160 41 128	115	47 175 17	36
	Total.	.tdgie7//	Lbs. oz. 94 12 110 4 128 14 157 13	122.9	42 11 97 8 95 3 68 8	76.0	61 4 36 5 12 0 45 6	38.7	22 5 5 6 2 12 1 0	7.9
	Rank, tree number, strain, grade, and year.		51, tree No. 23-77-17, Valencia Strain—Continued. Total crop— 1912. 1913. 1914.	Average	52, tree No. 23-89-8, Valencia Strain: Orchard grade— 1912 1913 1914	Average	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912 1913 1914 1914	Average

. 10 10 10 10 10 10 10 10 10 10 10 10 10	23		;					8 4 0 E1	16		
2.22 3.33 2.67 3.78	3.00	4.00 4.00	3.78	1.00	3.08	1.00 5.33 5.00	3.50	. 89 4. 67 4. 00	3.45	67 2.00 4.67	2.25
0000	0	0000	0	0000	0			0000	0	0000	0
0000	0	0000	0	0000	0			0000	0	0000	0
8000	23	8000	2	0000	0			×000	82	0000	3
L-000.	4.	4000	8	0000	0			4000	8	H000	00
2000	1	2000		0000				10000	-	0004	
2018	00	1000	2	1000	10		:	25.000	9	1120	4
17 0 0 10 0 0 1 3	4.7	40 00 00 00 00	1.0	0000	2.6			14 11 0 0 0 0 0 0	3.7	9 4 0 0 0 10 0 0	2.5
2000	3	0001	က	8000	-	: : : :	:	13	4	4000	-
3 15 0 0 0 0 2 14	1.7	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.5	11 11 0 0 0 0	0,4		5	7 2 0 0 0 0 0 0	3.0	0000	0.6
00004	16	5000	14	31	000		:	2002	22	12010	9
26 1 0 0 6 .0 6 .8	8.1	25 20 20 20 20 20 20	7.3	16 2 0 0 0 0 0 0	4.0			41 10 1 3 0 0 2 8	11.3	10 12 0 0 0 8 0 0	2.8
51 5 4 56	53	34	16	32 0 0 0 0	10			230 × 06	36	12 4 19 7	=
24 4 2 4 2 0 24 12	13.3	15 6 0 9 15	7.1	15 0 0 7 0 0 2 10	4.5			30 6 3 8 0 0 12 9	11.6	5 15 10 2 2 14	5.2
42 29 26 107	51	32 4 4 85	38	26	6			28 28 91 91	47	7 36 38 114	49
17 9 11 7 11 12 41 11	20.1	13 3 11 15 1 12 33 0	15.0	10 9 0 0 1 10 2 4	3.6			23 12 11 15 3 6 35 .4	18.6	2 14 13 9 18 0 40 12	18.8
14 37 35 65	38	10 22 37	27	16 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	12		-	26 43 24 64	39	32 31 146	53
0040	80	00000	9.6	4012	4.2			0 0 4 6	1.	1-4010	3.0
135	13	£ 41 × 51		70100				150	14	111 113 46	18.
111 1110 83 83 46	63	10 70 588 37	44	14 14 51	21			427 427 888	65	2 78 30 164	69
3 14 34 2 29 12 13 11	20. 4	3 3 3 22 2 2 19 14 11 12 11 12	14.2	4 10 1 3 4 7 15 3	6.4			7 13 23 5 24 5 26 15	20.6	0 11 23 10 11 6 46 2	20.2
321 169 5	124	3 108 202 17	83	12 82 83 33	48			15 190 267 50	131	133 14 122	89
0 10 72 3 449 7 0 13	30.8	0 12 26 0 57 0 4 11	22.1	3 4 16 3 15 8 7 15	10.7			42 3 72 8 12 10	32.8	0 4 32 4 4 14 29 4	16.7
260 578 334 304	369	164 256 286 205	228	152 90 85 123	113	36 44 15 10	26	352 338 338 338	367	76 283 134 553	262
126 4 139 3 109 15 114 14	122.6	76 8 778 13 87 3 75 7	79.5	67 11 18 13 22 4 37 2	36.5	16 4 3 0 1 13 2 2	5.8	160 7 100 10 111 4 114 11	121.8	40 10 82 7 58 10 165 5	86.8
Total crop— 1912 1913 1914 1915	Average	53, tree No. 23–98–6, Valencia Strain: Orchard grade— 1912. 1913. 1914.	Average	Standard grade— 1912 1913 1914	Average	Cull fruits— 1912 1913 1914	Average	Total crop— 1912 1913 1914 1915	Average	54, tree No. 23-80-8, Valencia strain: Orchard grade— 1913. 1914.	Average

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

əldsir	ev lo stiuts.	number	:::::	:]			0 1 6 2 1	9	::::::::	:
	admun Jiurî 19q	Average seeds	0.67 2.33 3.67 3.67	2.59		2.58	2.00 3.00 4.44	2.47	2.00 2.00 3.67 5.67	3.33
	F	Number.	0000	0			0000	0	0000	0
	80 and larger.	Weight.	$L^{b_{S},oz}$. 0 0 0 0 0 0 0 0 0 0	0			0000	0	0000	0
		Number.	0000	0			9000	63	H000	0.3
	96	Weight.	Lbs.oz. 0 0 0 0 0 0 0 0	0			7 0 0 0 0 0	1.8	0 0 0 0 0 0 0	0.2
		Number.	14 0 0 0	4			29 0 1 0	∞	0000	2
	112	Weight.	Lbs.oz. 8 13 0 0 0 0	2.2			18 1 0 0 0 0 0 0	4.7	41 4 0 0 0 0 0 0	1.2
		Number.	8000	-			000	63	8000	1
	126	Weight.	$\begin{array}{c} Lbs.oz. \\ 1 & 12 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{array}$	0.4			4 0 0 0 0 0 0 0	1.0	11 11 0 0 0 0	0.4
,		Number.	01 4 0	4			31 0	6	8032	=
	150	Weight.	Lbs.oz. 5 11 2 2 0 0	2.1		-	16 7 0 8 2 10 0 0	4.9	16 8 1 7 0 0 3 12	5.4
		Number.	113	4			78252	14	20 22	19
Sizes.	176	Weight.	Lbs.oz. 6 7 0 7 0 8 0 0	1.8			12 6 2 3 10 10 2 14	7.0	7 0 3 2 0 14 12 11	5.9
02		Number.	0140	4		:	17 37 42 115	53	38 31 116	50
	200	Weight.	Lbs.oz. 4 7 0 6 1 12 0 0	1.6			7 5 13 15 19 12 41 2	20.5	16 2 12 4 5 14 45 4	19.9
		Number.	07-40	20			39 35 152	28	80 82 52 8 80 80 80 80 80 80 80 80 80 80 80 80 80 8	45
	216	Weight.	Lbs.oz. 0 14 2 9 1 8 2 0	1.7			2 5 13 13 14 10 48 5	19.8	6 10 9 0 22 14 27 9	16.5
		Number.	85 ± 25	13			91 34 196	82	13 104 52	53
	250	Weight.	Lbs.oz. 1 1 3 11 1 6 9.12	4.0			1 12 27 5 12 12 55 14	24.4	4 4 12 13 37 5 16 6	17.7
		Number.	150 94	64			227 23 272	131	6 130 21	28
	288 and smaller.	·thgieW	Lbs.oz. 0 4 20 9 2 10 35 8	14.7			0 8 7 8 64 12	31.4	1 10 17 8 39 8 5 11	16.1
		Number.	56 117 26 189	97	13 2 2 13	28	148 479 162 755	386	156 180 307 306	237
	Total.	Weight.	Lbs. oz. 29. 5 28. 2 9.14 47.10	28.7	9 1 7 14 0 6 2 7	4.9	79 0 118 7 68 14 215 6 7	120.4	69 7 56 2 106 7.	85.8
	Rank, tree number, strain,	State, and Jean	54, tree No. 23-86-8, Valencia Strain—Continued. Strandard grade— 1912. 1913. 1914.	Average	Cull fruits— 1912. 1913. 1914. 1915.	Average	Total crop— 1912. 1913. 1914.	Average	55, tree No. 23-87-4, Valencia Strain: Ordard grade— 1912 1913 1914	Average

		!!!!	:	3 × × × ×	18		:	::::	:		1 : 1
1.67	3. 42	3.00	3.17	2. 2. 2. 2. 2. 2. 2. 4. 2. 2. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4.	3.30		2.75	5.4.5 5.33 5.33 5.33	3.83	1.00 2.00 5.33	2.92
0000	0			0000	0	0000	0	0000	0		
0000	0			0000	0	0000	0	0000	0		
0000	0		1	H000	1 00	4000		0000	0		:
0000	0			2000	2 0.	8000	7	0000	0		-:
. 0000				0000	0.	8000	0	0000			
8000	2			9000	4	2000	-	9000	2		
7000	1.3			9 14 0 0 0 0 0 0	2.5	2 14 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.7	8000 0000	0.9		
H000	0.3	-:::		4000	-	4000	-	0000	0		
0000	0.1			4000	0.6	0000	0.5	0000	0		
				8000	1	8000		0000			: 11
00 11	60			242	13	840001	13	1000	60		
5 10 0 0 0 8 8	1.7			27.04	7.1	22 0 0 0 0 4 111	6.8	5 13 0 0 0 0	1.5		
160	10			30	23	84 4 4 5 7 2 8 7 2 8 7 2 8 9 7 2 8 9 7 2 8 9 7 2 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	00	E0020	4		
150	2.2		1	15000	9.0	7.81	80	8000	1.8		
000	-		-:	24 13 13 13	10	13	_	9010			
2000	00	:::::		31 1124 124	59	26 28 142 142	64	24 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7		
9 0 1 0 1 0 4 0	3.3			25 3 12 4 48 4	23.2	23 10 15 6 53 0	25.5	10 12 0 8 1 5 0 6	3.2		
14 1 12 24	13			32 26 70 104	28	19 27 114 114	54	1212	5		
70000	4.6			157.40	1.1	00000	3.5	129	00		
70040				111 99 36	21	2339-7	19	8008			
100 24	21			18 130 130 96	74	7.87.	52	470808	00		
1 12 3 0 8 10 13 10	6.8			0 2220	24. 4	4112	17.3	0 11 8 6 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	2.5		
	7		:	1 2 45 30 30		2 2 2 4 27 23 3 16 16			9		:
255	37		:	114111	95	127 104 23	64	955 30 30	36		
14 17 14 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	8.8			31 13 53 9 11 0	24.9	0 9 31 6 32 14 5 12	17.6	1 21 3 2 7 12	00		
80 79 98 99	68	25 18 16 16	24	258 300 423 421	351	167 257 271 380	269	102 23 23 28 28 28 28 28 28 28 28 28 28 28 28 28	64	24 9 11	22
36 11 17 10 29 5 31 5	28.7	11 0 8 8 4 0 9 0 0	5.6	117 2 77 5 139 2 147 2	120.2	76 10 76 4 101 3 133 14	97.0	33 0 23 6 7 2 16 12	20.1	2 12 2 12 1 2 8 6	2.2
Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912 1913 1914 1915	Average	56, tree No. 23-86-9, Valencia Strain: Orchard grade— 1912 1913 1914	Average	Standard grade— 1912 - 1913 - 1914 1914 - 1915 1915 1915	Average	Cull fruits— 1912 1913 1914 1915	Average

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

əldsi	iev jo stiu	number	4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	00				:		:
	number tiuri roq	Average seeds	1.56 2.67 3.56 4.89	3.17	1.67 2.33 1.33	2.08	0 2.00 3.33 4.33	2.42	3.00	2.17
	r.	Number.	0000	0	0000	0	0000	0		
-	80 and larger.	Weight.	Lbs.oz. 0 0 0 0 0 0 0 0	0	0000	0	0000	0		
		Number.	4000	п	1000	00	0000	0		
	96	*tdgi9W	Lbs.oz. 2 12 0 0 0 0	0.7	7 13 0 0 0 0 0 0	2.0	0000	0		-
		Number.	11000	3	15000	4	91000	4		
	112	.tdgisW	Lbs.oz. 6 10 0 0 0 0 0 0	1.7	8 13 0 0 0 0 11 0	2.4	0000 0000 0000	2.6		
		Number.	4000	п	8008	2	0000	0		
	126	•tdgisW	Lbs.oz. 0 0 0 0 0 0	0.5	1 10 0 0 0 0 1 14	0.0	0000	0		
		Number.	54 0 0 10	16	8008	10	6000	70		
	150	.tdgisW	Lbs.oz. 28. 4 0 0 0 0 4 11	8.2	16 8 0 0 0 0 3 11	5.1	0000	2.6		
		Number.	41 4 6 37	22	16	00	16100	7		
Sizes.	176	Weight.	Lbs.oz. 19 10 1 13 2 14 16 2	10.1	7 8 1 12 3 10 14 9	6.9	4 12 0 0 0 8 7 2	3.1		
02		Number.	79 27 36 143	7.1	13 13 106 106	43	20 0 E	10		:
	200	Weight.	Lbs.az. 33 15 10 14 16 11 53 6	28.7	5 10 7 12 14 0 42 0	17.3	5 11 0 0 2 10 8 12	4.3		
		Number.	52882	69	2 4 2 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	4	r-4234	15		
	216	Weight.	Lbs.oz. 10 13 10 0 24 2 40 9	21.4	0 12 15 15 17 10 12 0	11.6	2 10 1 6 0 12 15 15	5.2		
		Number.	111 77 74 74	09	174 85 34	49	111 116 53	21		
	250	Weight.	Lbs.oz. 3 10 24 9 28 10 22 6	19.8	0 5 23 8 31 11 10 10	16.5	0 10 3 6 15 15	6.4		
		Number.	7 222 1117 53	100	166 92 12	89	25 53 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	37		
	288 and smaller.		.02. 14 6 6 1 8	9	46-18	0	4490	1		:
	28g sm	Weight.	Lbs.c 1 1 52 36 13	25.	3990	18.	19 72	œ		
	-i	Number.	264 404 303 449	355	94 307 280 260	235	68 108 54 161	86	25 116 11 6	40
	Total.	Weight.	Lbs. oz. 111 6 103 0 109 13 152 11	119.3	49 3 88 8 96 0 88 10	80.6	34 12 24 0 16 12 53 6	32. 2	13 14 7 0 2 4 1 10	6.2
	Rank, tree number, strain,		56, tree No. 23-86-9, Valencia Strain—Continued. Total crop— 1912. 1913. 1914.	Average	57, tree No. 23-89-9, Valencia strain:	Average	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1914	Average

3 21 21 21	6						:	60 44 0	18		
. 67 2. 56 2. 56 3. 00	2. 23	1.00 2.67 3.67 6.67	3.50	. 33 4. 00 3. 67 4. 33	3.08	1.67 1.00 1.67 3.33	1.67	1.00 2.56 3.00 4.78	2.84	2.67 5.67 5.00	3.17
0000	0	0000	0	0000	0		:	0000	0	0000	0
0000	0	0000	0	0000	0			0000	0	0000	0
1000	3	8000	-	0000	0			8000	-	8000	-
- E0000	2.0	8000	0.5	0000	0			NO 00	0.5	75000	0.5
0004		8000		0000				8000		#000 #000	2
5 31 0 0 0 0 11 1	8 0	1 15 0 0 0 0 0 0	3 4	8000	2 2			15 0 0 0 0 0	5 6	2000	2
19 0	5.	5000	2.	41 4 0 0 0 0	1.	-		13 10 0	65	4000	-
m00m	2	8000	-	8000	0, 5		1	10000	1	8000	2
1 10 0 0 0 0 1 14	0.9	1 10 0 0 0 0 0 0	0.4	0000	0.3			20 00 00 00 00	0.7	1 10 0 0 0 0 2 11	1.1
51 0 0 8 8	15	41 3 11 11	14	58-1-1	œ			69	22	42 0 0 17	15
26 13 0 0 0 0 3 11	7.6	21 7 1 9 0 0 5 0	7.0	14 11 0 8 0 8 0 8	4.1			36 2 1 2 0 5 8	11.1	21 12 0 0 0 0 8 1	7.5
97 4 × 64 	22	27 6 8 31	17	2014	4			35 39	21	31 23 23	16
12 4 1 12 4 2 21 11	10.0	12 8 2 13 1 0 13 4	7.4	6 0 0 0 1 1 12	2.1		:	18 8 2 13 1 8 15 0	9.5	14 8 1 14. 2 10 10 3	7.3
	52	39 21 95 95	45	8028	-x		-	47 26 113	53	47 12 109 109	46
11 5 7 12 16 10 50 12	21.6	15 12 10 9 9 4 36 12	18.1	3 7 0 0 6 13	3,1			110 110 111 111 121 131 143	21.1	18 5 4 14 7 7 42 8	18.3
98 68 109	59	20 17 17 19 10 10 10 10 10 10 10 10 10 10 10 10 10	44	9889	14			82280	28	117 227 555	37
1565	∞0	12021	1.	2023	0.9			2112	-	96270	7
3 17 18 27	16	2000	16.	133212	5			85.5 4.8 8 7-88	21	6 11 19	13.
85 101 87	69	15 59 104 27	51	37.000	16			23 67 113 64	67	25 24 34 34	09
0 15 26 14 37 3 26 9	22.9	4 14 18 14 36 15 8 6	17.3	2 12 2 8 3 0 11 6	4.9			7 10 21 6 39 15 19 12	22.2	8 1 27 4 34 11 10 12	20.2
259 121 36	105	86 131 13	59	88 e 15 1 15 1 15 1 15 1 15 1 15 1 15 1	33			11 174 155 28	92	4 176 72 17.	29
0 8 58 13 36 7 8 13	26.1	21 15 39 2 2 11	16.3	1 12 18 10 6 2 3 6	7.5			3 0 40 9 45 4 6 1	23.7	1 2 42 6 21 14 4 10	17.5
187 531 345 427	373	168 199 334 237	235	78 100 48 115	85	24 67 11	27	270 366 393 359	347	180 235 260	245
13 00 10	119.0	88118	85.3	6 13 5 2 7 9	28.1	10 0 7 9 3 0 0 15	5.4	2 13 2 13 5 5	118.7	78 7 85 15 86 6 97 13	87.1
97 1119 1115 1143	17	7.5 622 11.6 86		. 36 . 222 . 15	_			122 92 134	-		
Total crop: 1912 1913 1914 1914	Average	58, tree No. 23–88–4, Valencia strain: Orchard grade— 1912. 1913. 1914.	Average	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912. 1913. 1914. 1915.	Average	Total crop— 1912— 1913 1914 1915	Average	59, tree No. 23-88-9, Valencia strain: Orchard grade— 1913 1914 1915	Average

Table I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

eld.si	of var	Number 1	:::::	:		:	81 9 111	19		
	number Jinri 19d	Average seeds	0.67 6.33 6.00 7.00	5. CO	0 4.33 4.00 4.33	3, 17.	1.11 4.33 4.22 5.44	3.78	6.00 6.00	4.42
	r.	Number.	0000	0			0000	0	0000	0
	80 and larger.	Weight.	$\begin{array}{ccc} Lbs.oz. \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{array}$	0			0000	0	0000	0
		Number.	0000	0			8000	-	0000	2
	96	Weight.	$\begin{array}{c} Lbs.oz. \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{array}$	0		:	1 15 0 0 0 0	0.5	4 10 0 0 0 0 0 0	1.2
		Number.	4010	-			120 - 0	က	1000	33
	112	Weight.	Lbs.oz. 2 6 0 0 0 10 0 0	0.8			7 0 0 0 0 0	1.9	8000	1.6
		Number.	8000	-			0000	8	0000	2
	. 126	Weight.	Lbs.oz. 1 2 0 0 0 0 0 0	0.3			2 12 0 0 0 0 2 11	1.4	8000 7000	0.8
		Number.	0000	00			71 0 17	23	17 0 0 2	5
	150	Weight.	Lbs.oz. 15 3 0 0 1 2 0 0	4.1			36 15 0 0 1 2 8 1	11.5	8 11 0 8 0 0 0 14	2.5
		Number.	11-12	4			42 55 25	20	12252	$\overline{\infty}$
Sizes.	176	Weight.	Lbs.oz. 5 0 0 8 0 8 0 15	1.7			19 8 2 6 3 2 11 2	9.0	21120	3.4
01		Number	12 0 0 15	00			59 12 21 124	54	13 17 12 12 72	28
	200	Weight.	Lbs.oz. 5 2 0 0 2 4 6 1	3.4			23 7 4 14 9 11 48 9	21.6	5 6 6 10 4 0 27 0	10.8
		Number.	6 0 1 1 6	6		1	232	48	32 36 53	32
	216	Weight.	Lbs.02. 2 4 1 9 3 8 5 9	3.2			8 10 111 2 23 4 24 9	16.9	2 10 11 1 14 0 17 10	11.3
		Number.	7 6 116 40	17		1	32 93 110 74	11	512	48
	250	Weight.	Lbs.nz. 2 6 1 11 5 8 12 6	5.5			10 7 28 15 40 3 23 2	27.7	0 10 15 12 50 4 15 12	20.6
	P.:	Number.	7 109 133 17	42		1	11 285 105 34	109	1 94 198 24	62
	288 and smaller.	•tdgieW	Lbs.oz. 1 14 20 6 9 0 4 9	9.0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		3 0 62 12 30 14 9 3	26.5	0 4 222 6 55 0 6 10	21.1
		Number.	79 121 67 90	68	6 8 27 23	21	282 484 310 356	358	76 200 333 214	206
	Total.	Weight.	Lbs.oz. 35 5 22 22 8 29 8	27.9	8 14 3 11 1 7 0 12	3.7	122 10 113 12 110 5 128 1	118.7	37 6 58 6 104 4 73 1	68.3
	Rank, tree number, strain,		59, tree No. 23-88-9, Valencia Strain—Continued— Standard grade— 1912. 1913. 1914.	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912. 1913. 1914.	Average	60, tree No. 23–92-2, Valencia strain: Orchard grade— 1912 1913 1914	Average

	:		:	21 22 43 43	26		:		:		:
0.33 3.33 2.33	2.42	1.00 2.33 2.33 3.67	2.33	1. 22 3. 56 3. 44 4. 44	3.17	1.33 5.33 5.00	4.08	1.00 4.67 4.00	3.59	0 3.33 2.33 4.67	2.58
0000	0			0000	0	0000	0	0000	0		
0000	0			0000	0	0000	0	0000	0		
0000	0			0000	63	2000	60	0000	0		
0000	0			00 0 0 0 0 0	1.2	6000	1.6	0000	0		
91000	4		1:	0000	10	000	9	×000	2		
8000 8000	2.4			16 0 0 0 0 0 0	4.0	14 0 0 0 0 0 0	3.6	4 13 0 0 0 0 0 0	1.2		
0000	63		1	7000	4	2000	67	1000	.3		
4 15 0 0 0 0 0 0	1.2			8000 4000	2.1	2 10 0 0 0 0 0 9	0.8	8000	0.1 0.		
31	00		:	8102	13	33	6	71042	9		
16. 0000 0000 0000	4.1			25 0 0 0 0 14	9.9	17 0 0 7 0 0 1 8	4.7	8 11 0 0 0 1 0 0 1 0	3.0		
6008	9		-	31 5	13	64 70.0	6	144	10		
000 1000 4	2.6			14 7 12 1 1 0 6 7	6.0	8 8 8 2 10 2 10 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	00,	5008	2.3		
12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	10		1	34 118 89	38	128813	53	17 1 9 9	12		
13	0			0-11-9	00	41 00 0	2	11 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	00		
8009	4.0			14 7 4 4 33	14.	10 10 10 23 23 23 23 23 23 23 23 23 23 23 23 23	11.	831	4.		
4 8 9 8 4 8 4 8 4 8 4 8 9 8 9 8 9 8 9 8	6			11 35 42 77	41	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	32	0 2 4 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	16		
110 110 14 8	3.3			4 4 12 2 16 4 25 13	14.6	1 8 10 11 16 13 16 10	11.4	3 4 0 10 5 2 12 14	5.5		
4 6 16 65	23			6 57 103 116	7.1	101 53 42	49	10 17 53	21		
1 8 1 12 5 0 6 4	6.9			2 2 17 8 85 4 35 0	35.0	0 5 29 11 18 12 13 0	15.4	1 4 2 12 5 10 15 10	6.3		
91 106 42	61			5 304 66	140	0 1129 117 16	99	1 25 25 24	43		
10 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	13.8			1 6 40 14 80 1 17 0	34.8	0 0 30 15 33 11	17.3	0 4 18 11 55 14 5 12	20.1		
108	122	49 112 112 116	32	233 350 474 831	360	109 295 231 178	203	1000 1143	104	16 10 22 22	25
7225	2 1	1004	00	08001	က	111 10. 12 12 12 12	9	13 0 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6.	00 4 8	9
22 21 32 45	38.	27 3 1 15	. 11.	117 83 138 133	. 118.	55 78 61	. 69	31 73 45	43.	×400	4.
Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912. 1913. 1914. 1915.	Average	Total crop— 1912 1913 1914 1915	Average	61, tree No. 23-77-20, Valencia Strain: Orchard grade— 1913. 1914.	Average	Standard grade— 1912. 1913. 1914.	Average	Cull fruits— 1912 1913 1914 1914 1914	Average

TABER I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive Von.

e*.;85	*S1111L		ongs	14	IMEST OF	1			
	number tiuri reg	1	0.78 4.44 3.89 4.56	3.42	. 9.4.8. 6.00.00 . 00.00	3. S	5.33 6.67 4.00	4.17	3.17
	9:	Xumber.	0000	0	0000	0	0000	С.	
-	80 and larger.	.īdžisW	Lbs.az. 0 0 0 0 0 0 0 0	0	0000	0	0000	0	
		Number.	2000	3	ဗဝဝဝ	21	0000	0	
	96	Veight.	Lbs.az. 6 9 0 0 0 0 0 0	1.6	4000 0000	1.0	0000	0	
		Zumber.	8000	œ	1000	-	8000	9	
	112	Teight.	Lbso2. 19 2 0 0 0 0	4.8	0000	0.8	5000 7000	*i	
		Xumber.	900-	02	0004	~	2000	-	
ļ	126	.tdgisW	Lbs.oz. 3 2 0 0 0 0	0.0	2003 2003	1.1	2000	0.7	
1		Number.	5-40	15	2200	0	Young	-1	
	150	Teight.	Lbs.oz. 25 11 2 2 2 2 2 8	7.7	7 - 0 - 0 - 0 - 0 - 14	4.2	12 11 0 0 0 9 0 15	3.5	
11.		Number.	8∠2=	14	5006	2	₩ 0 61 x	2	
Sizes.	176	Weight.	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	6.1	440 120 8	6.6	Z048 Z008	÷. ×.	
J_		Number.	8883	41	2882	15	30 1 5 27	91	
	200	Teight.	Lbs.oz. 11 9 10 9 10 8 31 7	16.0	6 12 15 2 4 2 3 5 12 2 4 2 12 3 4 12 4 12 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	8. 23	. 2002 . 2002	6.5	
		Number.	2222	47	e 6 8 8	98	16 1 5 27	21	
	216	.jdgi∍∏	Lbs.oz. 4 12 21 5 29 8	16.9	22 10 122 10 4 10 4 10	13.4	7000 4700	4.1	
		Number.	8315	20	45% t	23	2858	7	
	250	.fdgisW	Lbs.oz. 1 9 32 7 24 6 28 10	21.8	338- 324-76 54-76	<u>s</u>	1000-	4.5	
	8 2	Number.	218 172 40	107	-6250	46	128 9	35	
	288 and smaller.	.tdgisW	Lbs oz. 0 4 4 49 10 89 9 10 10 5	37.4	6080 6080	12.6	0284	7.9	
		Zumber.	7 196 34.5 34.3 14.3	332	89 81 82 82 82 82 82 82 82 82 82 82 82 82 82	208	124 238 93 93	10	785a 8
	Total.	.reight.	<i>Lbs.oz.</i> 96 4 110 0 4 1153 12 3 3 11 1 1 1	117.8 3	21 22 2 4 2 2 2 4 2 2 2 4 2 2 4 2 4 2 4	76.3 2	88 68 12 12 12 12 12 12 12 12 12 12 12 12 12	35.6	x ; x -
	Rank, tree number, strain,		61, tree No. 23-77-29, Valencia Strain - Continued. Total crop - 1912. 1913. 1914.	Average	62, free No. 23-89-10, Valencia strain: Orchard grade 1912. 1913. 1914.	A verage	Standard grade – 1912 1913 1913 1914 1915	Average	Culf fruits— 1912. 1913. 1914. 1915.

00000	83		:				:	0 16 27	12		:
1.11 3.89 4.22 5.67	3.72	. 67 2. 67 5. 67	3.42	. 67 2. 67 2. 67 4. 33	2.59	1.33 2.00 2.33 4.67	2.58	3.22 4.89	3.03	1.67 4.67 3.67 3.67	3, 42
0000	0	0000	0	0000	0		1	0000	0	0000	0
0000	0	0000	0	0000	0			0000	0	0000	0
9000	02	0004	2	0000	0			0000	65	0000	52
4000	1.0	0000	1.3	0000	0			0000	1.3	0000	1.3
27 0 0 0	1-	000	4	9000	2			8000	9	00 00 00 00	4
16 7 0 0 0 0	4.1	7 0 0 0 0 0 0	2.6	3 12 0 0 0 0 0 0	0.9			40 00 00 00 00	3.5	0000	2.5
1004	4	4001	-	4000	-			8008	82	0000	2
7 7 7 7 7 7 7 7 7	2.0	0000	0.7	2 4 0 0 0 10	0.7			4 10 0 0 0 0 1 3	1.5	4000 0000 0000	1.0
21 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	16	29	6	0000	10			49	14	940	12
19 12 1 0 0 9 9 13	7.8	15 5 0 9 2 15	4.8	10 11 0 0 0 0 0 0	2.7			26 0 0 9 0 9 2 15	7.5	23 11 0 9 0 0 0 7	6.2
41	25	17 8 30	14	0140	4			353996	18	20 1 1 9	6
19 9 4 2 1 0 20 15	11.4	7 14 3 7 1 0 13 5	6.4	4000 7-9873	1.9			12 5 3 13 1 8 15 10	8.3	60004 6000	3.9
47 37 38 121	61	12 19 94 94	41	12002	7			17 43 106	48	12 26 9 9	26
19 9 14 10 17 4 47 6	24.7	5 0 15 8 8 8 37 10	16.7	2 5 1 4 11 4 11 4 11 4 11 4 11 4 11 4 11	2.6			7 2 26 11 10 15 42 5	21.8	5 0 10 6 3 14 21 8	10.2
59 62 52	48	245 242 242	41	5 12 27	12			10 58 64 81	53	33 32 70	35
8 2 17 15 24 10 20 13	17.9	1 14 18 13 21 1 18 14	15.2	2 0 1 1 0 0 0 3 0 0 3 0 0 3 0 0 0 0 0 0 0	4.2			3 14 20 3 25 7 28 1	19.4	2 4 11 15 12 14 24 2	12.8
134 30 30	29	4 1 8 8 1 8 4 3 4 5 4 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	55	0 10 34 41	21			101 115 84	92	7 88 88 94	67
3 7 42 10 34 10 9 9	22.6	1 6 28 1 29 7 13 15	18.2	0 0 111 8 2 12 5	6.7			1 6 31 3 40 15 26 4	24.9	24 14 28 13 28 13	22.1
15 211 91 6	81	0 66 99 119	56	33.33	42			3 152 50	26	0 107 160 78	98
4 4 4 48 12 27 10 1 4	20.5	20 0 20 0 20 30 0	15.5	0 15 16 5 13 15 6 8	9.4			0 15 42 11 44 2 11 13	24.6	0 0 26 6 48 2 20 11	23.8
234 523 297 295	337	95 298 254 247	224	52 98 106 117	93	24 36 7 16	21	171 432 367 380	338	121 254 290 306	243
109 10 134 1 106 15 112 14	115.9	49 4 92 12 90 12 92 9	81.3	26 3 22 6 32 12 35 10	29. 5	12 9 3 15 1 0 3 8	5,3	88 0 119 1 124 8 131 11	115.8	61 15 77 7 97 7 97 7 97 15	83.7
Total crop— 1912 1913 1914 1915	Average	63, tree No. 23-76-20, Sporting Strain: Orchard grade— 1912 1913 1914 1915	Average	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912: 1913: 1914: 1915:	Average	Total crop— 1912. 1913. 1914.	Average	64, tree No. 23–63–6, Valencia strain: Orchard grade— 1913 1913 1914 1915	Average

14648°—18—Bull. 624——5

Table I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

əldsi	of vari	Number i				:	0100	8		:
	number 1907 regit	Average seeds	0.33 3.33 4.67	2.92	1.00 4.67 3.00 5.00	3.42	1,00	3.25		2.59
	- F	Number.	0000	0			0000	0	.0000	0
	80 and larger.	Weight.	Lbs.oz. 0 0 0 0 0 0 0 0	0			0000	0	0000	0
		Number.	0000	0			000	63	9000	2
	96,	Weight.	Lbs.oz. 0 0 0 0 0 0	0			0000	1.3	4000 000 000	1.0
		Number.	×000	2			42000	9	2000	4
	112	Weight.	Lbs.nz. 4 14 0 0 0 0 0 0	1.2			14 14 0 0 0 0 0 0	3.7		6 6
		Number.	. 8000	0.5			0000	8	7000	65
	126	Weight.	$\begin{array}{c} Lbs.oz. \\ 1 & 4 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{array}$	0.3			5 6 0 0 0 0	1.3	2 12 0 0 0 0 0 0 3 10	1 8
		Number.	0,000	∞			24 10 10	20	33 0 11 21	1.4
	150	Weight.	Lbs.oz. 16 8 0 0 0 0 0 0	4.1			40 3 0 9 0 0 7	10.3		200
-		Number.	2001	3		:	32	12	35 29 32	66
Sizes.	176	Weight.	Lbs.oz. 6 0 0 0 0 0 0 0	1.6			15 7 3 5 0 8 2 13	5.5		0 0
		Number.	11004	4			88019	30	22 40 79 79	40
	200	Weight.	Lbs.oz. 4 11 0 0 0 0 1 6	1.5			9 11 3 14 22 14	11.7		0 0 0
		Number.	33	œ			88888	43	7 49 54 19	39
	216	Weight.	Lbs.oz. 3 8 1 2 1 3 5 8	2.8			5 12 13 1 14 1 29 10	15.6	2 7 16 14 21 15 6 11	19.0
		Number.	\$ \$ 4 \tilde{v}\$	18			149 149 149	88	119	7.5
	250	Weight.	Lbs.oz. 2 2 2 7 2 7 1 6 16 4	5.5			27 5 33 7 45 1	27.6	1 10 31 0 15 8 1 4	10 2
	d.r.	Number.	0 55 55	47			0 188 212 133	133	168	01
	288 and smaller.	.tdgisW	Lbs.oz. 0 0 15 15 13 12 12 12	10.6			0 0 42 5 61 14 33 7	34.4	39 8 6 10 4 0	11 7
		Number.	78 92 93 131	06	13 18 31 31	33	212 416 367 468	366	127 385 185 166	916
	Total.	Weight.	Lbs. oz. 38 15 19 8 16 5 36 5	27.8	9497 4900	4.3	107 2 101 2 115 12 139 4	115.8	4021	77 22
	Rank, tree number, strain,		64, tree No. 23-98-6, Valencia Strain—Continued. Strandard grade— 1912. 1913. 1914.	Average	Call fruits— 1912. 1913. 1914. 1915.	Average	Total crop— 1912 1913 1914 1914	A verage	66, tree No. 23-87-10, Coarso strain: Orchard grade— 1912 1913 1914 1915	Avorago

: : : :				16 3 54 32	26	; ; ; ;	:) :::::		::::	
0 3.33 4.67 4.33	3.08	2.00 2.33 4.00	2.25	3. 44 3. 22 4. 33	2.97	0 2.33 4.00	2.50	1.33 3.33 3.33	2.58	1.33 4.67 1.67 4.33	3.00
0000	0			0000	0	0000	0	0000	0		
0000	0			0000	0	0000	0	0000	0		
0000	0			9000	63	1000	8	0000	0		
0000	0			8000	0.	6000	6.	0000	0		
0,000				4000	1	0004	-	0000			:
41000	4		:	0000	~	9000	1	1000	0.3		
8000	2.0			16 14 0 0 0 0 0 0	4.2	9000 0000	4.0	0000 0000	0.2		
1018	-		:	00101	4	8000	-	0000	0		
0 0 0 0 1 12	0.7			50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.3	1000 000 000	0.4	0000	0		
81000	00			51 0 30 30	22	20 20 20 20 20 20 20 20 20 20 20 20 20 2	11	0,000	0.5		
0084 0018	4.3			26 1 0 0 3 10 14 6	11.0	19 10 0 12 0 0 3 6	5.9	1000	0.4		
14 0 30	12		:	46 9 17 65	34	21 11 20	13	8080	m		
7 6 0 0 13 10	5.8			21 11 3 14 8 7 28 15	15.7	9 13 5 6 7 8 15	6.1	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.3		
20 16 16	14		:	24 24 25 26	63	19 20 40 75	39	200 120 120 120 120 120 120 120 120 120	×		
2400	1.		:	8409	2	00.010	7	7222	-		
8079	5.			17 16 31 37	25	8 18 29	15	w0w4	85		
11 25	12			14 52 65 44	44	29 74 749	39	0 4 8 6 7 8 6 7	12	J	
2 1 1 1 1 1 4 4 1 4 1	4.2			5 1 17 15 26 3 15 9	16.2	1 13 10 0 30 7 17 0	14.8	0 0 14 1 10 2	3.9		
1991	10			6 128 58 17	52	1 77 56	65	0 6 53	22		
0.2 <u>1</u> ∞ m	3.2		:	12 0 7	15.5	9899	21.2	0444	6.7	:::::	
00104	1 ~			21332		10 88 88 22 28 41 71		0182	2		
0 1114 16	33		:	372	81	178 62 62 34	69	23420	32		
0.840	6.9			0 8 62 8 11 2 0 7	18.6	43 18 18 28 7	17.8	0 0 13 3 10 8 6 14	2 6		
75 128 71 97	93	29 37 4	19	231 550 260 270	328	123 356 264 241	246	13 74 89 129	92	46 5 13	18
37 3 27 11 27 3 39 7	32.9	15 0 2 8 0 12 2 0	5.1	112 1 136 13 103 4 109 8	115.4	65 5 100 1 100 13 85 13	88.0	6 14 17 1 28 6 40 3	23.1	10 2 3 2 0 8 1 10	3.8
Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912 1913 1914 1914	Average	66, tree No. 23-76-21, Valencia Strain: Orchard grade— 1912 1913 1914	Average	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912 1913 1914 1914	Average

TABLE I.— Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

əldsi:	of var	Yumber	2 0 17 14 14	00	:::::			: !!		:
	nedmun Jer fruit	Average seeds	0.89 2.56 3.89	2.61	. 33 4. 00 6. 67 3. 67	3.67	1.67 1.67 2.33 4.33	2.50	6.33	3, 83
	. E	Number.	0000	0	0000	0	000	:		
	80 and larger.	.tdgis∏	Lbs.oz. 0 0 0 0 0 0	0	0000	0	000		8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
ł		Number.	11000	63	0000	0	000			
	96	.tdgis77	Lbs.oz. 7 9 0 0 0 0	1.9	0000	0	000			
		Number.	27 0 0 0	-	4000	-	000			
	112	.tdgie777	Lbs.oz. 16 14 0 0 0 0 0 0	4.2	0000	0.6	000			
		Number.	8000	-	4000	-	000			
	126	.77eight.	$\begin{array}{c} Lbs.oz.\\ 1 & 12\\ 0 & 0\\ 0 & 0\\ 0 & 0\\ \end{array}$	0.4	2 1 0 0 0 0 0 0	0.5	000			
		Number.	40538	12	188	9	000			
	150	.tdgis77	Lbs.oz. 21 5 0 12 0 0 3 6	6.4	0001	2.8	000			
		Number.	24 113 26	16	26 1 0 13	10	1830	1 : 1		
Sizes.	176	.Telght.	Lbs.oz. 11 3 0 7 6 6 11 9	7.4	12 6 0 8 0 0 5 11	4.6	0 0 1 6 7 10			
		Number.	26 50 87	46	33 33	20	10 128 28			
	200	.tdgis77	Lbs.oz. 11 1 8 4 22 1 33 14	18.8	13 14 2 11 2 2 12 13	7.9	0 8 8 0 11 0			
		Number.	33.57	51	9 9 21	14	30 60			
	216	Telght.	Lbs.oz. 1 13 11 5 34 8 27 2	18.7	62.08.7 64.84	8.4	11 7 21 2			
		.radmuV	1 132 104 109	87	10 57 37 12	29	113 66 68 68	:		
	250	.7dgle77	Lbs.oz. 0 6 40 1 37 4 33 12	27.9	3 6 13 10 3 14	9.7	4 5 22 3 20 10		* * * * * * * * * * * * * * * * * * * *	
	i	Number.	240 99 63	101	108 94 4	52	135			-
	288 and smaller.	.tdgis77	Lbs.oz. 0 4 56 5 29 0 16 5	25.2	0 13 27 5 27 12 1 1	14.2	31 9 2 12 2 12			
	1	Number.	143 143 476 358 383	340	86 155 86 86	132	187 158 253 185	961	069	23
1	Total,	.Telght.	Lbs. oz. 82 5 120 4 129 11 127 10	115.0	47 54 47 32 33 33	45.2	85 15 37 13 79 2 63 2	66.5	8100	2.8
	Rank, tree number, strain,		66, tree No. 23-76-21, Valencia Strain—Continued. Total crop— 1912. 1913.	Average	67, tree No. 23-89-1, Rough strain: Orehard grade— 1912. 1913. 1914.	Avorage	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912 1913 1914 1914	Average

164 371 240 178	238	;;;;		::::	:	;;;;	:	0780	9.8	::::	:
67 00 3 78 2 89 1	33	33 67 67	00	00 67 67 33	16	333	78	63 63 00 00	41 0	33 67 33	75
444.60	83	, 0,10,4,	8		2.	1.00 4.00 (a)	-:	. H. W. 4.	23	.44.4	2.
:000		0000	0	0000	0			0000	0	0000	0
000		0000	0	0000	0			0000	0	0000	0
000		177	4	0000	0			171 0 0 0	4	2000	3
000		8000	3.1	0000	0			8000	3.1	8000	1.8
000		0000		0000			_:	2000		0004	
000		0000	9 13	0000	0 0			0000	13	1000	3
000		30 8 0 0 0 0 0 0 0	7.9	0000				30 1 1 0 0 0 0	7.9	6 14 0 0 0 0 0 0	1.7
000		10 80 8	4	0001	0.3			00000	4	жоон	2
000		11 9 0	2.1	0000	0,1			11 0 0 11 11	2.2	14000	1.4
1000		2000		0000	2			70101	9	4000	
808		11 13 16 0 0 0 3 16	5 25	0000	00			11 74 11 13 0 0 0 11 17	3 26	0 32 0 0 0 14 14	5 13
00-		35	12.	8000	0.			37 1 6 1 0 8 1	13.	17 2 0 6 1	6.
313		49 26 1 26	26	8110	-			52 27 28	22	21 4 4 2 26	14
0 8 1 6 13 5		22 5 12 0 0 7 11 14	11.7	1 0 0 0 0 0 0	0.6			23 12 12 8 0 14 11 14	12.3	10 5 1 12 2 0 11 13	6.5
824		48 2 78 1 33 1	46	1217	ro.			883 36 37 1	51	220 106 109 109	38
888		19 4 5	00	71124	2		-:	82.81	0	12322	00
23 1		19 10 13 13	18.	0041	2.			19 33 15 15	21.	8 10 1 7 1 35 1	15.
19 39 81		\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	36	21118	œ			10 54 99 113	44	7 30 36 56	32
111 15 15 8 6		13 0 10	13.6	0 12 3 14 3 3 14	2.8			0040	16.4	2 10 1 15 1 2 2 1	12.1
0 6 14 0 28	:	20 54 15 110 34 0	46	3230	12		: :	20 3 77 19 132 38 3 5	28	6 2 52 15 31 19	-
70 103 8 80			6		7				20		40
22 35 13 24 8		6 9 16 14 38 14 0 0	15.	0 0 6 11 7 0 1 2	65			6 9 23 9 45 14 1 2	19.	1 15 22 2 20 3 9 13	13. 5
248 229 15		10 30 79 0	30	1 35 35	25			11 91 114 3	55	177 70 70	99
- T T T T T T T T T T T T T T T T T T T		11180	00.7	4000	6.0			15 10 0	14.7	114 13 15 15	7.1
63.55		27-20		080-	_	1 1 1 1 1	:	13322		222 8	17.
295 416 408 285	351	281 249 303 82	229	101 80 20	53	17 56 56 16 0	22	310 406 399 102	304	116 312 178 178 232	210
133 2 98 8 127 7 98 11	114. 4	136 12 93 1 109 1 36 13	93.9	5 7 26 6 24 12 8 4	16.2	7-4-2 4-4-4 0 0	3.6	149 7 123 11 136 11 45 1	113.7	60 6 89 10 67 1 88 7	76.4
	<u> </u>	::::	<u> </u>	: : : :	:	::::	<u> </u>	::::	:		1
Total crop— 1912 1913 1914 1915	Average	strain: Orbard grade— 1912 1913 1914 1915	Average	Standard grade— 1912 1913 1914 1916	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912. 1913. 1914.	Average	, tree No. 23-87-3, Valencia strain. Orchard grade— 1912. 1913. 1914.	. Average

a No count was made to determine the seed content of the fruits in this group.

Table I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

oldgi	or var stiu:	Number	:::::			_:	19 7 36 30	23		
	number per fruit	Average seeds	0.33 3.33 3.67 3.00	2,58	1.33 1.33 4.00	2.00	. 67 2. 11 3. 11 3. 78	2.44	0 2.00 3.67 6.67	3.08
	٦. تو ت	Number.	0000	0			0000	0	0000	0
	80 and larger.	Weight.	$\begin{array}{ccc} Lbs.oz. \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{array}$	0.			0000	0	0000	0
		Number.	0000	0		:	5000	က	1000	0.3
	96	Weight.	Lbs.oz. 0 0 0 0 0 0	0			0000	1.8	0000	0.2
-		Number.	4000	4			000	9	4000	-
-	112	Weight.	Lbs. oz. 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.3			15 14 0 0 0 0 0 0	4.0	8000	0.6
		Number.	1000	0.3		:	6001	8	10001	2
	126	.tdgisW	Lbs. oz. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.1			5 7 0 0 0 0 0 0	1.5	2 12 0 0 1 2	1.0
		Number.	17 0 0	7.0			49 0.0 16	17	41 12 12	14
	150	Weight.	$\begin{array}{c} Lbs.oz. \\ 9.11 \\ 0.0 \\ 0.0 \\ 1.0 \end{array}$	2.7			26 11 2 3 0 0 7 14	9.2	21 1 1 9 0 8 0 7	7.2
		Number.	4-40	9			25 × 55	31	41 7 7 30	21
Sizes.	176	Weight.	$\begin{array}{c} Lbs.oz. \\ 7 & 3 \\ 0 & 6 \\ 1 & 14 \\ 1 & 6 \end{array}$	2.7			17 8 2 2 3 14 13 3	9.3	19 0 3 1 3 11 13 2	9.7
		Number.	41 62 ∞ ∞	00			34 30 37 38 38 38	47	51 44 113 97	51
	200	Weight.	Lbs. oz. 6 3 1 4 3 6 3 5	3, 57			14 15 12 1 11 2 39 0	19.3	21 8 17 13 5 13 36 15	20.5
		Number.	122	6			12 33 48 71	41	15 26 44 75	40
	216	Weight.	Lbs. oz. 1 15 1 0 4 11 5 6	3.3			4 9 11 15 19 13 25 2	14.4	5 7 9 2 18 3 24 9	14.4
		Number.	49 62 46	21			10 76 81 77	61	7 102 29	49
	250	Weight.	Lbs.oz. 1 6 1 14 10 5 14 2	6.9			3 30 30 8 23 15	20.4	2 8 17 15 37 13 8 10	16.7
	d.	Number.	30 30 20 20	39			6 270 100 40	104	3 118 19	58
	288 and smaller.	Weight.	Lbs. oz. 1 8 20 4 8 12 8 12 6 10	9.3			2 6 62 1 30 12 10 9	26. 4	0 12 21 8 38 6 4 14	16.4
		Number.	. 74 106 83 100	91	35 16 16	21	215 453 277 339	321	168 231 285 264	237
	Total.	Weight.	Lbs. oz. 37 7 24 12 29 0 31 13	30.8	13 4 7 7 4 7 7 4 7 7 4 7 7 4 7 7 4 7	5.7	110 14 117 8 99 5 123 11	112.8	76 3 71 0 104 6 94 11	86.7
	Rank, tree number, strain,		69, tree No. 23-87-3, Valencia Strain—Continued. Standard grade— 1912. 1913. 1914.	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912 1913 1914	Average	70, tree No. 23–85–9, Valencia strain: Orderd grade— 1912. 1913. 1944.	Average

::::	:		:	20 33 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	22		:		1:			11
0 4.00 2.33 5.67	3.00	2.67 1.67 4.00	2.08	0 2.2.89 5.44	2. 72	. 33 4. 00 5. 67	3.50	1.33 5.00 5.33	4.17	0 4.67 5.00 4.50	3.54	
0000	0			0000	0	0000	0	0000	0			
0000	0			0000	0	0000	0	0000	0			
0000	0		1	1000	65	0000	0	0000	0			
0000	0			2000	. 2	0000	0	0000	0	1 1 1 1	i	
0000	0			0000	0	0000		0000				
0000	0		:	4000	1	8001	-	1000	0.3			
0000	0.0			0000 0000 0000	9.0	1 14 0 0 0 0 0 10	0.6	0000	0.1			-
1000	0.3			9008	03	4004	2	0000	0		Ī	-
6000	0.1			2002	1.1	4002	1.	0000	0			
0000				8001		8008		0000				
4010	-			25 8 2 2 1 1 2 2 3 3 4 5 1 1 2 2 3 3 4 5 1 1 2 3 3 4 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	16	21 0 0 16	6	24 0 0 0	9			
4060	0.7			71.96	7.9	90041	4.6	00 0 0 0 0 0	3.2			
	1			23		7000						11
9094	60		-	74 7 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	24	38	21	100	9			11
3 1 0 0 1 0 1 14	1.5			22 1 3 1 4 11 15 0	11. 2	2 4 5 0 0 0 0 8 1 8 9 9	9.5	8 10 0 0 0 14	2.5			
2120	4			56 45 15 106	99	721 4 11 18	38	51 0 8	15			ii
6 4 6	1.8			11.81.8	3.3	4 2 0 1 2 1 3 2 4	5.5	0000	6.1		1	
0000				23 18 40 40	22	23 1 4 23	15.	3008				
1444	9			30 48 89 89	46	28 116 32	23	29	12			
0 7 1 10 5 2	2.2			5 14 10 10 19 13 29 11	16.5	10 1 4 4 15 6 4 6 11 7	8.2	10 13 0 6 0 6 5 10	4.3			
10 88 37	14			8 68 110 66	63	81 87 8	37	23 8 4 1 4 8	14	-		1
1000	4.4			15 15 4	2.3	410241	1.	12 6 21	4.4			Ï
0821	_			2848	21	272 272 27	12.	P004	_			
212 222 75	38			144 140 140 94	96	2 58 327 3	86	918 355 0	34			
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	9.2			4000	25. 6	0 8 14 10 92 5 1 1	27.1	20 2 20 4 7 15 0 0	7.6		. :	
3868	99	32 62 7 16	29	20 20 32 32 32 32 32 32 32 32	332	1	227	155 103 2 44 39	85	298	30	
	6		24	\$ 220 5 359 2 331 4 419	0 33	5 171 9 129 9 186	7 25	7 15 10 16 10 16 10 16	8		4	
9 6 15 8 12 15 41 13	19.6	12 15 4 14 1 7 2 12	5.	98 8 91 6 118 12 139 4	112. (71 38 127 77	78.	63 24 10 14	28.	10 12 4 15 1 10 0 6	4.	-
Standard grado— 1912. 1913. 1914. 1914.	Average	Cull fruits— 1912. 1913. 1914.	Average	Total crop— 1912 1913 1914 1914	Average	71, tree No. 23-91-10, Valencia strain. Orchard grade— 1912. 1913. 1914.	Average	Standard grade— 1912. 1913. 1914.	Average	Cull fruits— 1912. 1913. 1914.	Average	

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

eldsi	iev lo stin	IJ Number	HQ4H	82						:
	number tiuri rəq	Average seeds	0.56 4.56 4.67 5.25	3. 71	0 2.67 4.00	2.67	0 3.67 4.67	2.66	.33 3.67 1.67 6.67	3.03
	'g ;	Number.	0000	0	0000	0	0000	0		
	80 and larger.	Weight.	Lbs.oz. 0 0 0 0 0 0 0 0 0 0	0	0000	0	0000	0		
		Number.	0000	0	1000	0.3	0000	0		
	96	.tdgisW	Lbs. oz. 0 0 0 0 0 0 0 0	0	0000 11000	0.2	0000	0		
		Number.	4001	-	41000	4	0000	63		
	112	Weight.	Lbs, oz. 2 7 0 0 0 0 0 10	8.0	8 12 0 0 0 0 0 0	2.2	8000	1.6		
		Number.	4004	23	8000	-	2000	0.5		
	126	Weight.	Lbs.02. 2 4 0 0 0 0 2 5	1.1	1 13 0 0 0 0 0 0	0.5	10000	0.3		
1		Number.	45 0 0 16	15	34.00	10	4000	9		
	150	Weight.	Lbs.oz. 23 0 0 0 7 14	7.7	17-12 0 8 0 0 2 7	5.2	13 2 0 0 0 0	3.3		
		Number.	57 6 0 43	27	24 2 11 16	15	15000	4		
Sizes.	176	Weight.	Lbs. oz. 25 12 2 12 0 0	12.0	19 7 0 14 0 8 7 1	7.0	7 7 0 0 0 0 0 14	2.1		
		Number.	108 12 4 89	53	63 11 13 54	35	7103	00		
	200	Weight.	Lbs. oz. 44 4 4 9 1 10 35 15	21.6	26 2 4 9 6 0 21 2	14.5	9 13 0 0 0 7 2 11	3.2		
		Number.	57 15 17 47	34	25 28 28 28	92	16 1 27	Ξ		
	216	Weight.	Lbs.oz. 20 14 5 5 6 10 17 1	12.5	9 2 6 5 13 0 9 14	9.6	0000	4.1		
		Number.	41 50 87 22	50	24 91 57 19	48	42 288	15		
	250	.tdgieW	Lbs.oz. 13 9 15 6 29 11 7 10	16.6	7 15 22 8 21 2 6 2	16.2	4 12 1 9 1 0 11 14	4.8		
	P.	Number.	10 149 362 3	131	14 176 153 9	88	163882	37		
	288 and smaller.	Weight.	Lbs. oz. 2 10 34 14 100 4 3 1 1	34.7	3 14 45 0 45 6 2 13	24.3	6 0 18 6 5 14 4 1	8.6		
		Number.	355 310 479 1227	343	220 299 256 131	227	126 92 28 90	84	0108	20
	Total.	.tdgisW	Lbs. oz. 145 8 67 13 139 13 92 5	111.4	95 8 86 12 86 0 49 7	79.4	24 7 7 11 29 1 1 29 1	27.9	4 7 3 6 1 12 1 13	2.8
	Rank, tree number, strain,		71, tree No. 23.91-10, Valencia strain—Continued. Total arop— 1912. 1913. 1914.	Average	72, tree No. 23-90-3, Valencia strain: Orchard grade— 1912 1913 1914	Average	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1914	Average

1 13 13	6		;	::::				0000	0.8		:
3.33 5.11 5.11	2.81	1.00 4.67 8.00	4.50	9.33	5.00	3.00 3.67 4.67 5.67	3.92	1. 44 4. 44 7. 67	4.58	.33 1.00 3.67 1.33	1.58
0000	0	0000	0	0000	0			0000	0	0000	0
0000	0	0000	0	0000	0'			0000	0	0000	0
1000	0.3	0000	0	0000	0			0000	0	H000	0.3
0 11 0 0 0 0 0 0	0.3	0000	0 .	0000	0			0000	0	00 00 00 00 00 00 00 00 00 00 00 00 00	0.2
4000	9	8000	-	4000	-			L000	જ	8000	-
14 14 0 0 0 0 0 0	3.7	1 12 0 0 0 0 0 0	0.4	4000 000	9.0			4000	1.0	1 12 0 0 0 0 0 0	0.4
10000	-	4000		8000	-			1000	C2	4000	-
2 14 0 0 0 0 0 0	0.7	8000	0.5	1 11 0 0 0 0 0 0	0.4			3 13 0 0 0 0 0	1.0	9000	9.0
57 0 10 8	16	\$\frac{4}{8}\times 0.0	13	4000	4			00 802	91	45 0 1	12
30 14 0 8 0 0 2 7	3.0	24 1 1 9 0 0	6.4	000000000000000000000000000000000000000	1.8			31 6 1 9 0 0	62.2	22 15 1 10 0 0 0 8	6.3
57 118	20	8400	14	2000	8			15000	17	09414	17
26 14 0 14 0 8 7 15	9.1	19 9 1 0 0 0 3 11	6.1	5 11 0 0 0 0 0 0	1.4			25 4 1 0 0 0 3 11	7.5	29 7 2 0 0 7 1 13	8.4
88 11 61 61	43	82228	38	4100	2			72 21 65	40	92 34 18	36
35 15 4 9 6 7 23 13	17.7	27 11 7 12 0 12 23 14	15.0	1 10 0 6 0 0 0 12	0.7			29 5 8 2 0 12 24 10	15.7	41 3 15 2 0 6 7 12	16.1
41 119 33 55	37	48 48 48 48	28	8008	9			37 15 56	33	47 25 1 6	20
15 4 6 10 13 6 19 7	13.7	8 7 12 5 8 16 5 8	9.5	4 11 0 11 0 0 2 10	2.0			13 2 8 7 18 15	11.5	18 10 9 15 2 5	7.8
38 96 60 57	63	24 51 94 56	56	84 8 8 8 9	16			27 64 94 104	72	9.84	38
12 11 31 1 22 2 18 0	21.0	7 10 15 11 32 0 17 4	18.1	0 15 0 0 14 4	±, ∞			8 31 8 8 8 8 8 8 8	22.9	20 0 28 13 3 0	13.2
36 262 37 176 25	125	388 1	102	57 7 80 13	45			14 88 348 136	147	26 20 20 20 20 20 20 20 20 20 20 20 20 20	20
41 6 4 4 1 2 2	8	15 to 20 to	9	1332	60			1026	2 1	1010	20
63 51 61 61	32.	10.00	27.	201 861	10.			4 0 5 4 4 8 8 4 4 4 8 8 4 4 8 8 8 9 4 8 8 8 8	38	7.300	13.
356 442 293 229	330	221 137 418 232	252	60 66 41 138	92	842 112 111	18	289 245 471 381	346-	330 321 6 40	174
154 6 110 6 95 7 80 5	110.1	93 3 42 15 123 9 76 5	84.0	26 5 15 12 8 13 37 0	22.0	2222	2.2	121 15 61 2 134 6 115 5	108.2	144 9 103 5 2 5 15 15	66.5
Total crop— 1912 1913 1914 1915	Average	73, tree No. 23-91-4, Valencia strain: Orchard grade— 1912. 1913. 1914.	Average	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912 1913 1914 1914	Average	74, tree No. 27-82-14, Long strain: Orchard grade— 1912. 1913. 1914.	Average

Table 1.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

əldsi	isv 10 stim:	19dmuV	-	:		:	34 1 19 19	19		:
	number 1	Average seeds	0.33 3.00	1.75	0 1.00 1.67	1.25	2. 1. 44 2. 44 2. 00	1.53	4. 33 4. 33 4. 33 8. 33	2.75
	5. :	Number.	0000	0			0000	0	0000	0
	80 and larger.	Weight.	Lbs.oz. 0 0 0 0 0 0 0 0	0			0000	0	0000	0
		Number.	0000	0	:::::	:	-000	0.3	0000	0
	96.	Weight.	Lbs.oz. 0 0 0 0 0 0 0 0	0			0000	0.3	0000	0
	-	Number.	8000	r.:		_	2000	-	8000	5.
	112	Weight.	Lbs.oz. 1 4 0 0 0 0 0 0	0.3 0.			0000	8.0	10 00 00 00 00	0.3 0.
		Number.	0000	С			4000	-	0001	- 1
	126	.tdgisW	Lbs.oz. 0 0 0 0 0 0 0 0	0			0000	9.0	000 8 800 8	0.4
		Number.	13	4		:	23.51	15	21 0 0 5	2
	150	.tdgis7//	Lbs.oz. 7 7 0 0 0 7 0 0	2.0			30 6 1 10 0 7 0 8	8. 2	2008 8008	3.3
		Number.	110	8			1.400	21	1225	12
Sizes.	176	Weight.	Lbs.oz. 5 11 0 0 0 7 0 8	1.7			35 2 2 0 0 14 2 5	10.1	13 14 2 3 1 2 5 3	5.6
02		Number.	3 7 1 23	10			25.82	46	71 27 16 80	49
	200	Weight.	2 15 1 6	4.3			53 10 15 8 9 5 9	20.4	28 0 10 11 7 4 30 15	19.3
		Number.	1232	1		:	1288	22	31 50 58 58	51
	216	Weight.	Lbs.02. 4 8 1 2 4 8 0 7	2.6		-	23 2 11 1 4 14 2 12	10.5	111 6 20 5 20 5 20 5	18.8
		Number.	122 88 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	98			81 81 12	63	45 1119 51 60	69
	.250	Weight.	Lbs.oz. 3 3 3 4 4 3 0 15	9.2			23 .3 29 10 3 15	22.4	14 9 36 7 19 14	22.5
	7,	Number.	168 2 2	58			42 256 128 4	108	125 36 35	52
	288 and smaller.	Weight.	. Lbs.oz. 4 8 18 14 39 2 0 9	15.8			12 2 64 11 39 2 1 2	29.3	3 2 3 1 1 1 7 9 10	13.8
		Number.	91 101 226 10	107	34 67 8	28	455 489 238 53	309	214 326 170 251	240
	Total.	.tdgis77	Lbs.oz. 39 0 24 9 75 15 3 13	35.8	12 13 3 15 1 11 1 1	4.9	196 6 131 13 79 15 20 13	107.2	83 13 66 33 88 33	83.9
	Rank, tree number, strain,	Braue, and year.	74, tree No. 27-82-14, Long strain—Continued. Straidert grade— 1912 1914 1915	Average	Cull fruits— 1912 1913 1913 1914	Average	Total crop— 1912 1913 1914 1915	Average	75, tree No. 23-77-19, Valencia strain:	Average

	1 : 1	1 ::::1	: 1	8 11 2 2 2 2 2 2 2 3 1 3 1 3 1 3 1 3 1 3	12	1 ::::!	1:1		:	1 ::::	: 1
	:								1	: : : : : : : : : : : : : : : : : : :	
2.67 5.67 6.00 4.67	4.75	2.33 4.67 .67 5.67	3.34	2.4.8. 2.4.8.89	3.61	1.00 3.00 5.33 6.33	3.92	0 3.67 1.33 3.67	2.17	0 .33 .1.33 (a)	. 55
0000	0			0000	0	0000	0	00	:		
0000	0			0000	0	0000	0	00			
0010	0		:	0000	0	0000	0	00			
0000	0			0000	0	0000	0	000	:		
1000	٠. ت			80-10	-	4008	2	10-			
×000	3 0.			2000	9	4004	6	000			
0000	0.			4000	0	1001	0	00			
0000	0		_:	2001	-	8000	2	20			
0000	0 0			1000	0.4	80.00 80.00 80.00	1.2	0 1 0			
12 0 0 1	8			8000	91	12 0 12	9	-100			
0 0 0 0 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.6			16 9 0 0 3 0	4.9	5 10 0 0 0 8 0 8	3.0	3 13			
4187	4			34 6 19	16	00 H 70	20	25.00			
3 1 0 0 0 0 4 8 8 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.7			15 14 2 7 2 10 8 5	7.3	3 13 2 12 0 7 2 4	2.3	9 6 11 8			
12 12 11 12 11	7			25 83 10 12 83 10 12 83	55	22 119 5	15	33			
4 13 0 4 0 14 4 7	2.6			32 13 10 15 8 2 85 6	8.12	8 13 7 6 5 11 2 0	6.0	21 2			
15 1 26 26	=		:	252 66 84 84	62	24.2	#	42			
7-994	6		-:	13 9 9	2	92111	0	1011			
1000	က်			29 29 29 29	22	41000	5.	120			
1100	15			129 60 88	83	14 24 21 0	15	89			
22 12 8 0 0 0	4.4			18 2 39 3 22 14 27 8	26.9	4rr0 4890	4.8	22 e 0 0			
4.65.4.8	22			1180 040 120	74	11 0	∞	643	:		
12 15 12 15 1 3 6 8	5.4			44 43 12 10 16 2	19.2	0 12 4 4 3 0 0	2.1	11 12 0			
950 90 90 90 90	62	25 4 4 6	14	288 424 194 359	316	80 80 71 32	99	268 235 235	233	310	6
0000m	0.0	00%01	5.	10 H 4 O	4.	9487	65	02002	5.	0000	0.
23 16 7 32	20	9801	2.	113 116 74 122	106	31 27 27 15	25	115 107 84 10	79	0810	
Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1915	Average	Total crop— 1912 1913 1914 1915	Average	, tree No. 27-83-13, Corrugate Rarain: Orchard grade— 1912 1913 1914 1915	Average	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1915	Average

a No count was made to determine the seed content of the fruits in this group.

Table I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

riable	stin	The Talmber	109 203 115 40	117	:::::			:		:
10 .	number Jiuri rəq	Average seeds	0.33 2.33 5.00	2.36	1.00 4.33 4.33 4.33	3.33	1.33 6.00 3.00 2.67	3.25	2.67. 1.67 5.00	2.33
	29ml . 4	Number.	00		,.0000	0	00	:		
	80 and larger.	Weight.	$Lbs.oz. \\ 0 & 0 \\ 0 & 0$		0000	0	0 0			
		Number.	00		1000	0.3	00			
	96	Weight.	Lbs.oz.		, 0 0 0 0 0 0 0	0.2	0 0			
		Number.	0 %			0.8	00			
	112	Weight.	Lbs.oz.		1 13 0 0 0 0 0 0	0.5	0 0			
		Number.	0.00		00-	0.5	0-1			
	126	Weight.	Lbs.oz.		8008	0.3	0 0	4		
		Number.	10 61		17	10	30	:		
	150	Weight.	Lbs.oz.		8 0 0 0 0 0 15	2.2	0 0 0			
		Number.	133::	:	1204	1-	13		::::	
Sizes.	176	Weight.	Lbs.oz. 9 15 5 15		5 0 15 0 0 2 2	3.0	8 1 8 9 2 9 2 9 5 6			
502		Number.	15.00		6 5 1 1 1 1 1 8 1	00	10 22			
	200	Weight.	Lbs.oz.		2 .6 1 15 0 7 6 15	2.9	25			
		Number.	99 4		8491	5	30			
	216	Weight.	Lbs.oz. 25 5 1 6		25 C C C C C C C C C C C C C C C C C C C	1.8	11 2 16 8			
		Number.	I 688		13 20 1	10	97			
	250	Weight.	Lbs.oz. 29 12 0 0		0 5 6 6 4 11 1 12	3.3	32 8 10 12			
	r.	Number.	40		0 8 2 2 2	21	175	1		
	288 and smaller.	Weight.	Lbs.oz.		0 0 12 4 0 7	5.7	45 14 2 13			
		Number.	348 5518 55	308	69 62 50	56	279 271 310 129	247	0818	12
	Total.	Weight.	Lbs.oz. 146 15 137 9 112 8 26 3	105.8	19 13 20 10 19 12 19 1	19.8	124 12 72 14 92 15 45 4	84.0	0 0 3 0 1 12 2 4	1.8
	Rank, tree number, strain,	Branch and Jones	76, tree No. 27-83-13, Corrugated strain—Continued. Total crop— 1912 1914 1914	Average	77, tree No. 23-88-3, Corrugated strain: Orolland grade— 1913 1914 1916	Average	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912 1913 1914 1915	Average

101 161 116 102	120			::::		::::		49 82 82 64	7.8		:
2.78 4.00	2.97	1.67 5.00 3.00 3.33	3.25	2.67 4.33 .67 2.67	2.59	0 2.00 3.67	1.50	3.00 3.22 3.22	2.39	0 5.67 2.67 4.00	3.08
00		0000	0	00			:	::00		0000	0
00		0000	0 0	00				00		0000	0
		0010	3	1 ::00			:	1 :: 10		4000	
		00%0	0.		<u> :</u>		:		;	13 000 000	-
00		0000	0.1	00				0.0		000	0.
00	:	8000	8.0	500				0.0		9000	2
0 0		1 12 0 0 0 0	0.4	3 2 3				3 0 0		8000	0.9
08		8008	2	04	:			10		1001	0.5
00		1 9 0 0 0 0 1 10	0.8	2 0				0 0		6006	0.3
-::01	1 : 1			1 : -				1 ::		1	
0.0		2 8 11 7 3 3 3	4	::16				121		8109	4
2 4		1 8 8 7	1.8	0 6				9 0		4 11 0 10 0 0 3 0	2.1
98		8401-	70	25				32		∞ rv O rv	70
2.2		610	2.1	99				6		1.404	2.0
: : 14		8108		0 =				0 41	:	8008	
31.0		10 7 0 12	7	183:	1			::88		171 6 9	00
2 8 12 0		4 0 0 0 0 4 13 4 13 4 13 4 13 4 13 4 13	2.9	97-				9 8 12 0		3 7 6 13 2 8 3 10	4.1
36		8081	70	47				18		13 22 6	11
∞ <u>4</u>		2000	1.9	00			1	5	:	9808	3.9
188		74000	_	8 17				200.		0482	
1110		22.23	10	108	;	1 :::::		121		300	17
37 3		0 10 0 10	3.2	37 5				41 11 4 8		0 5 9 10 12 14 0 0	5.7
217		1,820	7	264				290	:	255	20
614		01-84	2.0	44				22		08008	5.4
	:	00.00		::60	1	000-10	6	1,26:	:	0 9 4 1 0	
322 369 383 187	315	14488	41	240 206 444 95	246	0811		281 268 130	296	36 115 29 29	89
144 9 96 8 114 7 66 9	105.5	18 9 14 13 15 6 12 2	15.2	108 3 63 8 134 7 39 5	86.4	0 0 1 14 1 10 1 10	1.2	126 12 80 3 151 7 52 10	102.8	19 2 30 5 38 10 12 2	25.0
Total crop— 1912 1913 1914 1914	Average	78, tree No. 23-76-19, Corrugated strain: Orchard grade— 1912 1913 1914 1914	Average	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912. 1913. 1914.	Average	79, tree No. 23-77-16, Corrugated Strain: Orchard grade— 1912 1913 1914 1915	Average

TABLE 1.—Detailed statement of the unnual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive - Con.

eld ain	of Ye. fruites,	Number				:	25224	113	
	iedmun iumi isi	Average sbeeds	1.67 1.67 1.67	1.33	0.5. 8.67 8.00	1.75	8.5% 8.5%	2.06	2.67
	-J.:	Number.	00				:00	; 4	0000 0
	80 and larger.	.tdgis777	Lbs.oz.				0 0	17	0000
		Zumber.	: 00		1111	: 1	00	:]	0.3
	96	"Teight,	Lbs.oz.				0 0		0000 0
		Number.	00				00		400m N
	112	.tdgis77	Lbs.oz.				0 0		200 <u>0</u>
		Zumber.	0-				0.01		-00 <u>0</u> m
	126	Treight.	Lbs.oz.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			0 0		-000 - x00x x
		Zumber.	n = .				01.03	2	2008 I
	120	77eight.	Lbs.oz. 0 14 3 4				0.0		2 0 0 E G
		Number.	7.2	:					5 8 8 5 5
Sizes.	176	Treight.	Lbs.oz.				11 2		×4-×
32		Number.	= = = = = = = = = = = = = = = = = = =	:			27		33 45 27 23 38
	200	.77eight.	Lbs.oz.				15 10		24 8 8 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		Number.	58				26.8		그림됐던 뭐
	216	Weight.	Lbs.oz.				26 9.0 1		4014 E409 5.7
		Number.	105			. :	141		16 65 4 4 36
	250	.tdale777	Lbs.oz. 36. 5			6 6	49 3		* # 8 8 - = = = = = = = = = = = = = = = = =
	71	Number.	100	:		0 0	15		4880 2
	288 and smaller.	.thgis77	Lbs.oz.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			47 0.8 0.4		2510 F
		Zumber.	1148 227 410 92	219	0 22 E3 8	Ξ	184 835 538 126	862	1886
	Total.	.1dgls77	Lbs.oz. 77 15 63 5 129 8	76.2	0830	1.2	97 - 169 8 47 5	102.5	63.6 63.6 63.6
	Rank, tree number, strain,		79, tree No. 23-77-16, Corulgated strain—Continued. Standard grade— 1912 1913 1914 1916	Average	Cull fruits— 1912 1913 1914 1914	A.vorago	Total orop— 1912 1913 1914 1916	Average	80, tree No. 23-75-21, Valencia Stratin: Orehard grade 1912 1913 1914 1916 Average.

				18 32 22 11	22		:	::::		::::	
.33 1.67 2.00 4.00	2.00	2.67 2.67 3.00	2.17	. 56 2.33 3.89	2.56	5. 67 5. 67	5.08	1.00 5.33 4.33	3.33	1.67 3.33 5.00 6.33	4.08
0000	0			0000	0	0000	0	0000	0		
0000	0			0000	0	0000	0	0000	0		
0000	0			0000	0.3	4000	-	0000	0		-:-
0000	0			1000	0.3	173	0.7	0000	0		
0000			:	0000		8000		0000			
0007	2			100%	4	0100	20	8000	-		
4000	1.1			0001	2.1	20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.5	1000	0.5		
9010	2			101	5	6007	33	8000	0.5		
0000	0.9			4 11 0 0 0 0 5 8	2.7	3000	∞ ∞	1000	0.3		
6001	00						1				
0082	6			20 0 33 0 34 34	1 19	01 1 4 1 2 2 4 2 2 4 2	4 17	8000 4000	8		
1008	3.			61-08	9.	51 20 15 10 11 11 11	7	1.000	ı.		
123	12			41 6 38 38	24	22 4 5 5 5 5 5	22	×0000	9		
01 9 4 11	5.0		:	H 0: 4:0	10.1	0 15 6	9.7	11003	2.8		
4808				17 2 4 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9		10	_	8040			:
37 9 7 19	18			225 612 612	51	36 17 94	47	81044	=		
14 13 3 8 3 0 6 15	7.1			30 17 17 13 13 23 9 8	20.3	15 10 6 15 17 10 36 15	19. 2	5 10 0 0 10 11 11 11 11 11 11 11 11 11 11	4.5		
26 116 20	19			45 40 3 3 2 2 2 2 2 2 2 3 3 3 2 3 3 3 3 3 3	40	7 1 1 1 47 3 47 3	38	9 4 4 8	∞		
8 10 14 14	00			70470	4	2000	20	<u>0</u> ∞-30	0		
010100	9			41 11 11 11	14	24 24 16	17.	0==0	20,		
23 23 18 18 18	27			38 104 85 22	62	7 62 46 15	333	2000	10	1	
1200	00			4100	20.1	0.5325	10.8	1 1 2 3 3 1 1 2 3 1 4 1 4 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5	3.1		
1177	10		:	2322		116			21		
112 112 40 15	45			18 170 86 86 15	72	2 58 4 2	35	10 22	22		
3 15 26 9 10 12 2 14	11.0			5 1 42 3 24 14 2 14	18.8	0 10 21 14 12 11 0 8	9.1	0 18 15 4 2 12 0 11	5.0		
158 178 97 96	132	28 36 37	19	298 410 252 218	235	134 208 194 241	194	928 04 09	61	244	56
63 4 48 6 31 14 32 12	44.1	13 2 2 4 1 12 0 9	4.4	123 1 113 12 86 9 84 7	102.0	59 1 64 12 76 10 97 3	74.4	25 1 20 7 114 6 22 15	20.7	16 9 1 12 1 19	5.9
Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1915	Average	Total crop— 1912 1913 1914 1914	Average	81, tree No. 23–75–18, Valencia strain: Orchard grade— 1912. 6 1914. 6 1915.	Average	Standard grade— 1912. 1913. 1914.	A vorage	Cull fruits— 1912. 1913. 1914.	Average

Table I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

eldsi:	ev lo stini	I Number	28682	-						:
	number per fruit		5.22 5.44 5.44	4.17	0 3.67 1.67 4.33	2. 42	1.33 1.00 2.00 2.33	1.67	0 3.00 3.00	1.47
	TI.:	Number.	0,000	0	.0000	0	0000	0		
	80 and larger.	.tdgisW	Lbs. oz. 0 0 0 0 0 0 0 0	0	0000	0	0000	0		
		Number.	4000	1	8101	က	0000	0		
	96	Weight.	Lbs. oz. 2 12 0 0 0 0 0 0	0.7	5 8 0 11 0 0 0 11	1.7	0000	0		
		Number.	12 00	8	88-1-1	9	1011	2		
	112	Weight.	Lbs. oz. 7 5 0 10 0 0 0	2.0	11 14 1 12 0 10 0 10	3.7	4 4 0 10 0 0 0 10	1.4		
	:	Number.	. 0000	4	9000	4	1001	0.5		
	126	Weight.	$\begin{array}{ccc} Lbs.\ oz.\\ 5 & 1\\ 0 & 0\\ 0 & 0\\ 3 & 3 \end{array}$	2.1	3 6 1 1 0 0 4 15	2.3	6000	0.3		
		Number.	42 2 4 2 2 5	21	13 13 18	21	12 0 1	4		
	150	Weight.	Lbs. oz. 23 0 1 1 2 4 10 11	9.3	26 2 6 8 0 9 8 13	10.5	6 5 0 0 0 8 0 8	2.0		
		Number.	30 88 68	28	26 13 10 31	20	2000	2		
Sizes.	176	Weight.	Lbs. oz. 13 11 1 15 3 13 30 5	12. 4	11 12 6 0 5 0 13 10	9.1	2 0 0 0 1 7	1.0		
02		Number.	52 17 53 108	58	46 33 26 63	42	2000	3		
	200	Weight.	Lbs. oz. 22 4 6 15 23 4 4 42 10	23.8	19 3 13 1 12 0 24 7	17.2	2 15 0 12 0 0 1 4	1.2		
		Number.	113 65 65	46	110 28 28 28	30	12251	- x		
	216	Weight.	Lbs. oz. 4 14 14 10 26 5 23 4	17.3	7 2 111 4 16 8 9 4	11.2	4 7 7 8 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	2.8		
		Number	12 74 55 27	42	18 40 63	32	1 6 9 11	1~		
	250	.hdgisW	Lbs. oz. 4 1 22 14 19 15 8 14	13.9	5 13 12 6 22 15 2 15	10.8	0 1 12 3 0 3 9	2.2		
	P. i.	Number.	157 49 5	54	15 81 105 6	52	24 23 23	25		
	288 and smaller.	Weight.	Lbs. oz. 1 2 37 2 15 7 1 3	13.7	4 0 19 7 31 13	14.2	0 5 10 8 6 0 5 15	5.7		
		Number.	232 343 241 308	281	209 218 246 164	209	45 67 35 55	51	16 46 9 8	20
	Total.	Weight.	Lbs. oz. 100 11 88 12 92 12 121 11	101.0	94 12 72 2 89 7 65 15	80.6	21 4 16 8 9 12 18 6	16.5	6 4 5 14 1 10 2 0	3.9
	Rank, tree number, strain,	graue, and year.	81, tree No. 23-75-18, Valencia strain—Continued. Total arcop— 1912 1914 1914	Average	82, tree No. 23-85-8, Unproductive strain: Orchard grade— 1912 1914 1914	Average	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1916	Average

1127.	=	: : : :	1:	::::	:	::::	1:	0 - 8 9	4		
22 22 22	. 92	88888	66	67	17	80808	. 42	28 00 11	. 20	06500	42
9.25.1.	0	.79.22	0	0000	0 3.	H. W. 4. 70	3	0000	0	0000	0 3.
0000	0	0000	0	0000	0		i	0000	0	0000	0
0000	60	8000	2	0.000	0		<u>:</u>	8000	63	9000	2
	12	0000	4	0000	0		H	0000	4	8000	0
5 8 0 0 0 0 11 0 11 0 11 0	-	10000	i	0000				2000	1,	4000	1. (
27 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	6	2000	00	×000	2			8000	5	17 0 0 0	4
16 2 2 6 0 10 1 4	5.1	7000 7000	1.8	0000	1.3			12 0 0 0 0 0 0	3.1	10 0 0 0 0 0 0	2.5
10027	20	9108	60	8000	-			0108	က	4000	-
3 15 1 1 0 0 5 8	2.6	3 9 0 10 1 10	1.5	1 10 0 0 0 0	0.4			5 3 0 10 1 10	1.9	0000	0.5
63 15 19	25	25 0 0 0 41	101	177	20			42 0 1 16	15	190	7
1-∞0±0	12.5	8000	4.9	8080	2.7			1080	9.2	4004	3.4
90 72		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-	2208	4			4002	-	3100	
2 31 0 13 0 10 1 34	1 22	0 30 30 30 30 30 30 30 30 30 30 30 30 30	1 14	8000	00			35 5 3	9 17	21 20	5 13
41 9 5 51	10.	8115	9	4012	i			12 9 1 6 2 10 15 1	7.	9 4 0 14 0 7 11 9	5.0
28.33.33	45	14 41 16 74	36	11 0 4 13	2		:	25 41 20 87	43	17 12 24 77	33
22 2 13 13 13 12 0 26 11	18.7	6 0 16 11 7 2 28 8	14.6	4 14 0 0 1 12 4 13	2.9			10 14 16 11 8 14 33 5	17.4	7 4 4 8 10 10 29 2	12.9
30 442 40	37	8 50 50 28	35	27 23 4 3	6			11 58 53 55	44	25 25 47	25
111 4 113 2 117 4 113 12	13.8	13 0 19 10 9 11	13.2	0 0 0 0 0 0	3.3			21 2 21 2 21 8 19 1	16.5	1 2 8 11 10 0 16 2	9.0
122	39	0 883 26 20 1	51	19 19 19 1	19			102 2 2 2 6 9 1 2	20	4 1118 37 1 34 1	48
	0	1	2 2		9				-	13 25 11 3 3 3	9
6 3 14 2 25 15 5 10	13. (0 0 0 33 144 8 4 4	17.	1 12 6 0 2 12 13 0	5.6			1 12 32 13 36 10 21 4	23.	1 37 13 10 13	15.
16 129 29	77	2.18 2.2	40	222.0	25			151 95 8	65	193 56 20	89
4 5 29 15 37 13 7 7	19.9	0 8 19 6 22 10 0 10	10.8	0 14 13 12 6 2 1 2	5.5			33 2 28 12 1 12	16.3	0 4 47 11 17 2 5 7	17.6
270 231 227 227	280	93 263 236 178	193	58 93 41 95	72	18 101 6 12	34	169 457 283 285	299	91 350 145 212	200
122 4 194 8 100 13 86 5	101.0	47 8 884 8 68 5 9	71.5	28 9 21 4 113 5 31 6	23.6	10 0 7 6 1 5 2 10	5.3	86 1 113 2 100 3 102 5	100.4	44 14 98 14 53 1 76 5	68.3
Total crop— 1912 1913 1914 1915	Average	83, tree No. 23-89-7, Valencia strain: Corollard grade— 1912. 1913. 1914.	Average	Standard grade————————————————————————————————————	Average	Cull fruits— 1912. 1913. 1914.	Average	Total crop— 1912 1913 1914 1915	Average	84, tree No. 23-75-23, Valencia Strain: Orchard grade— 1912 1913	Average
1.1	7.0	20 40 (411)									

TABLE I.-Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

1	able	of vari	Number	8 9 8 1 8 9 9 1 9 8 7 1 9 8 1 1			:	12 18 18 44	20		
	ìo	number per fruit.	Average sbeeds	0.67 3.67 4.67 6.67	3.92	. 67 4. 33 2. 33 3. 33	2.67	. 78 4.33 3.56 5.00	3.42	1.33 2.67 4.00	2.67
j		رة 1.	Number.	0000	·O			0000	0	0000	0
		80 and larger.	Weight.	Lbs.oz. 0 0 0 0 0 0 0 0	0			0000	0	0000	0
			Number.	0000	0			9000	०२	0000	3
		96	Weight.	$\begin{array}{c} Lbs.oz. \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{array}$	0		2 0 0	4000	1.0	7 10 0 0 0 0 0 0	1.9
			Number.	11000	3		:	8000	2	2000	-
		112	Weight.	Lbs.oz. 6 9 0 0 0 0	1.6			16 11 0 0 0 0 0 0	4.2	8000	0.8
		-	Number.	8000	0, 5	9 9 9 9		0000	cs	8-0-1	-
		126	Weight.	Lbs.oz. 1 3 0 0 0 0	0.3			2000 2000	0.8	11 11 0 10 0 0 8	0.7
			Number.	2000	က			48082	10	4444	9
		150	Weight.	Lbs.oz. 5 3 0 0 0 0 0 0	1.3			14 0 0 1 2 3 4 4	4.7	7 '7 2 0 1 2 0 14	2.9
			Number.	100181	00			£223	20	22 491	7
	Sizes.	176	Weight.	Lbs.oz. 5 7 0 0 0 8 7 12	3. 5			14 11 0 14 0 15 19 5	9.0	0 15 2 3 2 1 6 13	3.0
	-		Number.	12 0 30 30	12			29 12 29 107	44	3 42 49 106	50
		200	Weight.	Lbs.02. 5 4 0 0 2 2 11 6	4.7			12 8 4 8 40 8	17.6	1 4 16 8 22 8 39 15	20.1
			Number.	9 1 4 20	10			26 29 76	35	0 45 84 84	49
		216	Weight.	Lbs.oz. 2 4 0 5 1 8 10 2	3.5			3 6 11 8 26 4	12.5	0 0 16 1 27 9 28 5	18.0
			Number.	30	13			7 125 48 64	61	0 20 40 40	44
		250	Weight.	Lbs.oz. 1 11 3 10 9 4	3.9			2 9 38 13 17 6 20 1	19.7	0 0 0 18 12 14 13 14 13	14.3
		70 2	Number.	0.5248	40			298 80 49	107	1 91 19 19	37
		288 and smaller.	·JdgisW	Lbs.oz. 0 3 21 9 6 2 6 3	8.5	8 9 9 8 8 9 9 8 9 9 9 8 9 1 1 8 9 1 9 8		0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	26.1	23 1 11 11 5 2	10.0
			Number.	55 113 45 136	87	21 44 7 14	22	167 507 197 362	308	38 264 209 277	197
		Total.	Weight.	Lbs. oz. 27 4 23 9 13 14 44 11	27.3	12 10 2 9 1 0 2 11	4.7	84 12 125 0 67 15 123 11	100.3	22 84 83 11 96 6	71.6
		Rank, tree number, strain,		84, tree No. 23-75-23, Valencia Strain—Continued. Standard grade— 1912. 1913. 1914.	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912 1913 1913 1914	Average	85, tree No. 23-88-7, Valencia strain: Orchard grade— 1912 1913 1941	Average

, !!!!!			:	00000	3	: : : :		: : : :		::::	:
1.67 2.00 3.67 5.67	3.25	3.00 5.33 5.67	4.25	2,00 3,33 3,11 5,11	3.39	0 3.33 5.00 4.67	3.25	4.00 3.67 6.33	3.50	1.00 4.33 2.67 4.67	3.17
0000	0			0000	0	0000	0	0000	0		
0000	0		- :	0000	0	0000	0	0000	0		
0000	0			0000	က	0000	ಣ	0000	0		
0000	0			2000	6	15000	2.3	0000	0		
0000				0000	-	×000	2	0000			
E 000	8			8000	20	22001	9	17 0 0 0	4		
8000	2.0			11000	2.8	13 6 0 0 0 0 0 10	3.5	10 8 0 0 0 0	2.6		
1000	0.3			4101	8	2007	2	0000	0		
0000	0.2			1000 x	0.9	2000	1.3	0000	0		
0000			_:	0000	_ !	4001		0000			_:
180000	5			32 4 8 2	10	33	=	217	9		-:
0000	2.7			17 10 2 0 1 10 0 14	5.5	17 1 0 0 0 0 4	5.3	111 7 0 0 0 9 1 8	3.4		
4-4-	8			9982	6	13 - 23	2	1000	4		
4047	2			2127	82	12821	7	4002	6.		
1010				4000	4	00000	4	7000			
13-7-18	-			11 43 56 119	57	83 15 20 33 15 20	20	0 4 rc	7		
3 11 0 7 3 2 4 15	3.1			4 15 16 15 25 10 44 14	23.3	8 4 6 2 6 2 10 14 10 14	8.0	8 5 0 0 1 12 1 15	3.0		
30	11		:	1 49 73 2 114 4	59	4 16 19 19	17	9450	6		
6 14 15	9			0 % 1~ 4	9	25.50	8	4842			
0100	ಣ		:	38 38 38	21	11.51	9	8-1-9	3.		
111 74	17			1 87 57 96	09	4 4 4 8 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	38	1 14 35	15		
1267	5.0			ಬಜವರ	19.3	9 8 2 6	12.8	14 7 8	4.5		
13,500	1			272		11. 1.5 7	-	0240			
39 7 65 0	28			156 45 58	65	2 59 224 6	73	812	40		
0 4 1 1 1 4 0	6.3			4 6 2 5 5 4	16.3	8 10 2 10 1 10	19.8	1 6 7 0 4 2 2 14	00.00		
0888	1 ~	N.C.		36 13 14 13 14 14 14 14 14 14 14 14 14 14 14 14 14		0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1	1771	100	0 = 0 = 0]:
825 820 130	73	257	15	91 371 249 428	285	128 142 340 104	179	186 986 76	82	04468	25
25 1 19 1 12 13 38 12	23.9	4 7 7 9 8	3. +	52 9 105 13 97 15 139 6	98.9	65 8 43 14 106 3 39 7	63.8	41 5 21 6 22 12 24 0	27.4	18 8 2 14 2 14 6 1 14 1 14 1 14	6.2
Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1915	Average	Total crop— 1912 1913 1914 1915	Average	86, tree No. 22-90-5, Unproductive strain: Orchard grade— 1912 1913 1914	Average	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1915	Average

Table I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

əldsir	of var	Number i	10 4 54 17	21	:::::			:		
lo 1	number per fruit	9gri9vA sb99z	0.44 3.89 5.22	3.33	1.33 3.00 2.00 6.67	3.25	. 67 3. 00 3. 67 4. 67	3.00	2.00 3.33 3.33	2.83
	p	Number.	, 0000	0	0000	0	0000	0		
	80 and larger.	Weight.	Lbs.oz. 0 0 0 0 0 0 0 0	0	0000	0	0000	0		
		Number.	113	3	11000	3	0000	0		
	96	Weight.	Lbs. oz. 8 15 0 0 0 0	2.3	000	1.9	0000	0		
		Number.	39	01	10000	1	4000	-		
	112	Weight.	Lbs. oz. 23 14 0 0 0 0 0 0	6.1	8000	0.8	000 0 000 0	0.7		
		Number.	2007	62	1001	0.5	нооо	0.3	1 1 1 1	
	126	Weight.	Lbs. oz. 4 0 0 0 1 2	1.3	0000	0.3	0000	0.2		
		Number.	254 J	17	2024	5	010	2		
	150	Weight.	Lbs.oz. 28 7 1 0 0 9 4 12	8.7	6 6 0 0 1 1 1 14	2.3	3 12 0 0 0 0 0 0	1.1		
		Number.	38 1	14	24745	10	1081			
Sizes.	176	Weight.	Lbs. oz. 17 12 0 13 0 8 6 3	6.3	2 6 1 12 10 9	4.5	0 0 0 0 1 6 0 10	9.0		
ω		Number.	39 115 38	27	4 30 106	42	1000	5		
	200	Weight.	Lbs.oz. 16 9 6 2 6 6 6 6 14 13	11.0	1 10 10 11 13 4 41 10	16.8	3 3 0 6 1 3 2 12	1.9		
		Number.	39.42	92	1,1 69 65	4	- co. 4 g	1-		
	216	Weight.	Lbs.oz. 3 11 7 5 13 6 13 6	9.4	0 6 14 7 27 14 22 2	16.2	0 6 0 15 1 7 7 0	2.4		
		Number.	57 58 58	53	0 110 62 41	53	113	20		
	250	Weight.	Lbs.oz. 1 11 18 6 31 6 18 1	17.4	0 0 22 9 12 12	17.2	0 5 3 13 3 10 16 9	6.1		
	ď.	Number.	7 140 286 18	113	120 257 29	52	18 18 18	34		
	288 and smaller.	Weight.	Lbs. oz. 1 14 31 10 76 12 4 8	28.7	0 4 29 6 18 0 7 15	13.9	0 4 18 10 6 8 5 6	7.7		
		Number.	252 280 435 188	289	40 304 270	210	23 107 48 103	20	52 13 7	20
	Total	.tdgis W	Lbs. oz. 125 5 68 2 130 5 65 5	97.3	22 2 89 10 86 2 97 7	73.8	11 11 23 12 14 11 32 5	20.6	3 8 11 1 1 1 1 6	2.4
	Rank, tree number, strain,		86, tree No. 23-90-5, Unproductive strain—Continued. Total crop— 1912 1913 1914	Average	87, tree No. 23-77-21, Valencia strain: Orchard grade— 1912 1913 1914	Average	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912 1913 1914 1914	Average

0047	60	::::	;		1:	::::	1:	10.538	12		:
1.33 2.56 4.78	3.00	8.57.11 8.00 8.00 8.00	3.92	.67 .67 4.83	2.59	0 4.33 4.50 3.67	3. 13	2. 56 2. 11 5. 33	3.16	2.33 5.00 5.67	3.38
0000	0	0000	0	0000	0		Ì	0000	0	0000	0
0000	0	0000	0	0000	0		:	0000	0	0000	0
1000	60	2000	1	0000	10			0000	-	0000	5
1 000	6	6000	6	0000	0		1:	6000	6	8001	8 0
1000	1	8000	0	0000				8000	0	0000	0.
0000	63	80000	10	9000	2			24 0 0 0	9	4008	2
5 12 0 0 0 0	1.4	2000	2.8	8000 0000	0.9			14 14 0 0 0 0 0 0	3.7	10000	1.1
1005	-	10001	2	8000				0001	8	100%	2
m000	4.	7006	2	2000	4.			1006	9	6002	6.
1000	0	4000	-	1000	0			2000	-	0004	
19 3 4	1-	02 8 4 6	6	16	5.0			38	14	47.00	70
10 2 0 0 1 9 1 14	3.4	201 244 1	4.5	8 13 0 0 1 0	2.6			2 11 2 11 2 1	7.0	4000	2.6
6 10 25	=	21 1 18 18	12	1078	4			20 7 1 20 8	15	07070	m
13 13 13 13	5.2	13.2 8 15	5.3	13	1.7			98601	7.0	170	1.3
21411	1~	7800	1	10000				830 13		0000	
11 29 33 113	47	948	36	10	9			19 8 8 72	45	104	12
4 13 11 1 14 7 44 6	18.7	3 13 2 12 15 14 34 10	14.3	4. 7 0 7 3 5 1 15	2.5			8 4 3 3 3 19 3	16.8	0 6 14 1 0 7 1 10	4.1
252	52	85 85	36	28	œ			6 15 42 113	44	1 6 88	6
0 12 15 6 29 5 29 2	18.6	1 2 4 15 17 3 27 10	12. 7	0001	3.0			2 5 5 5 17 9 37 11	15.7	0 8 15 8 15 0 6	3.1
123 73 97	74	63 2 2 3 3 2	37	07.94	14		: :	70 57 1 77 3	51	0 113 15	32
27.00	62	100000	co	01020	9			11175	00	0 12 10 5	3
28 34 0 29 29 34 0	23.	0 61 6	12.	0884	4.			2212	16.	0 31 5 0	9.
210 83 47	98	0 190 21 15	57	0.02 4.83	35			282 0	91	203 18 0	55
0 124 13 5 5 7 8 13 5 7	21.6	0 0 45 1 6 13 3 13	13.9	0 0 18 0 1 2 11 4	7.6			0 0 63 1 7 15 15 1	21.5	0 0 44 3 0 0 0 0	12.2
69 188 188 180	300	84 278 157 253	193	24 101 127 127	74	8,22,23	24	155 180 180 385	290	11 398 33	121
2 1 4 2	89	4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2.2	4 4 E E E E	3.3	0 2 2 2 2	4.0	7770 7770 7770	80	82 17 14	0
37 1117 101 131	96	44 73 88	29	39788	23	00001		79 97 73 129	94	6 104 12 12 16	35
Total crop— 1912 1913 1914 1915	Average	88, tree No. 23-86-3, Valencia strain: Orchard grade— 1912 1913 1914	Average	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912. 1913. 1914. 1915.	Average	Total crop— 1912 1913 1914 1914	Average	89, tree No. 23-91-6, Coarse strain: Orchard grade— 1913. 1914.	Average
		86								86	

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

6	oldsi.	of var	Number	::::	(:			28800	13	!!!!!	:
J		number per fruit.	Average seeds	2.00 1.33 1.00 4 67	2.25	1.33 3.0) 2.33 2.33	2 29	1.37 2.22 2.78 4.22	2.61	0 1.67 4.33 3.00	2.25
		r.	Zumber.	0007	0.3			0001	0.3	.0000	0
		80 and larger.	Weight.	Lbs.oz. 0 0 0 0 0 0 0 0	0.3			00000	0.2	0000	0
			Number.	0100	1			00	63	0000	0
		96	Weight.	$\begin{array}{c} Lbs.oz.\\ 0&0\\ 0&10\\ 1&2\\ 1&7 \end{array}$	0.8			0 10 0 10 1 2 2 2	1.1	0000	0
			Number.	4-1-8	4			∞ <u>-</u>	70	70000	-
		112	Weight.	Lbs.oz. 2 9 0 8 0 6 4 8	2.0			4 15 0 8 0 6 6 5	3.0	0.00	0.8
			Number.	0 1 0 41	4			22 0 1 1	9	1000	4
		126	Weight.	Lbs.oz. 0 0 0 0 7 6	2.0			000 12 20 20 20 20	3.3	2 15 0 0 0 6 2	2.3
			Number.	23.22	13		:	22022	18	22 1 12 12	6.
		150	.7dgi9W	Lbs.oz. 3 15 0 14 10 9 9 1	6.1			6 3 10 9 14 1	8.3	11 10 0 9 0 0 6 2	4.6
			Number.	1 12 17	11		:	18825	14	130 0 13	6
	Sizes.	176	Weight.	Lbs.oz. 0 7 0 7 10 6 7 9	4.7			0 7 3 2 10 6 9 14	6.0	22 148 0 0 0 1 0 0	4.1
	52		Number.	3 7 16	19			444 20 20	31	16, 31 15	16
		200	.tdgisW	Lbs.oz. 1 3 2 8 19 8 6 1	7.3			1 9 16 9 19 15 7 11	11. 4	6 13 12 12 1 6 6 2	8.9
			Number.	36 9	12			124201	21	15 23 5	18
		216	Weight.	Lbs.oz. 0 6 12 6 3 4	4.3			0 6 10 1 14 10 3 10	7.2	10 0 10 0 10 15 1 15	6.6
			Number.	0 86 .6	28			0 134 101 7	61	. 882240	30
		250	Weight.	Lbs.02. 0 0 6 3 26 14 1 14	8.7			0 0 37 15 31 14 2 3	18.0	1 1 1 1 1 2 29 6 0 0	10.2
			Number.	0 164 105 3	89			367 123 3	123	26 137 0	41
		288 and smaller.		02. 11. 10. 10. 10.	9			0 41 3	00	0110	9
		28 Sm	Weight.	Lbs.c 0 30 1 27 0 0	14.			0 1 12 1 10 0 1	26.	0 89 1 0	Ξ
		17	Number.	17 201 328 94	160	46 69 111 4	33	74 668 379 131	313	82 123 247 56	127
		Total.	Weight.	Lbs. oz. 8 8 8 43 7 108 5 42 8	50.7	27 1 3 11 1 · 9 1 · 4	8.4	41 12 151 14 122 3 60 10	94.1	38 43 50 60 60 60 60	46.9
		Rank, tree number, strain, grade, and year.		89, tree No. 23-91-6, Coarse Strain—Continued. Standard grade—1912. 1913. 1914. 1915.	Average	Cull fruits— 1912. 1913. 1914.	Average	Total crop— 1912 1913 1914 1914	Average	60, tree No. 23-91-9, Coarse strain: Orchard grade— 1913. 1914.	Average

	1:			83.48	13						
0 4.00 4.67	2.83	0 2.00 1.67 4.33	2.00	2.56 2.89 4.00	2.36	2.33 5.00 5.00	3, 33	2.00 3.33 4.67 4.67	3,67	1. 67 4. 00 1. 67 4. 33	2.92
0000	0			0000	0	0000	0	0000	0		
0000	0			0000	0	0000	0	0000	0		
0008	0.05			0000	5.	0001	0.3	0000	0		
0000	0.3			0000	0.3 0.	0000	0.2 0	0000	0		
0001	Ľ			0007		0000	_	0000	_		
4000	-		:	6000	63	1001	0.5	8000	0.5		
8000	0.6			6000	1.4	0 10 0 0 0 0 0 10	0.3	100000000000000000000000000000000000000	. 0.3		
80 O8	2		:	80041	9	1008	2	000-	0.3		
1 12 0 0 0 0 1 9	0.8			4 11 0 0 0 0 7 11	3.1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.3	0000	0.1		
16 0 0 5	5		:	38 10 17	14	16 0 0 6	9	14 0 0 2	4		
9006	1-		:	0601	8	9 1 0 1 4 1	1.	1000	2.		
8008	2			8000	7	8102	60	1000	2.		
12 0 18	o			310	17	34 0 0 7	13	00000	9		
5 12 0 8 0 0 8 0	3.6			13 4 3 6 0 0 14 1	7.7	16 0 0 0 3 3	5.9	10 0 0 0 0 0 0 14	2.7		
26 0 26 26	14			24 8 8 11 8 14	31	288 10	26	217	oo		
10 14 0 0 2 2 10 11	5.9			17 11 12 12 3 8 16 13	12.7	24 8 11 14 3 10 4 3	11.1	9 0 1 14 0 14 1 11	3.4		
178 57	Ξ			23.23	29	25 24 19 5	18	32 33	11		
11 4 2 4	4.2		:	4400	10.9	5 10 12	6.9	41002	3.9		
20.00	_			111 48 121 88		21 9446 97 7 7 7 1	32	22 12 12 12 9 0 2 1			
£21481	18		:	6 1244 18	48	1		1	=		
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5.9			2 2 14 5 42 10 5 8	16.1	7 1 15 7 20 15 0 10	11.0	7 7 3 8 3 0 0 10	3.6		
60 147 11	99			88 6 111	97	9 70 167 0	62	1853	49		
, 1 12 13 8 36 4 2 9	13.5			1 12 20 3 75 14 2 9	25.1	2 6 48 12 0 0	17.3	9 5 17 3 18 13 0 4	11.4		
85 78 100 3	116	30 37 10	22	197 238 457 166	265	165 179 251 40	159	146 104 91 15	68	1122	20
7222	7	177	2	0 12 2 2 1 2 2 2 1 2 2 2 2 1 2 2 2 2 2 2	00	13 11 15 25 25 25 25 25 25 25 25 25 25 25 25 25	0	20118	1~	10 0 112 114	-
37 1 19 1 38	37.	41 2 1 2 2	5.	90 65 135 67	89	68 60 80 18 80	57.	233	27.	4 1 0 1 1 0	33
Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1915	Average	Total crop— 1912 1913 1914 1915	Average	91, tree No. 23-89-4, Unproductive strain: Orchard grade— 1912 1913 1914	Average	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912. 1913. 1914. 1915.	Average

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

eld cir	ev lo siun	Number f	4420	17		1 : 1		:	::::	:
	per fruit	Arerage sbeeds	23.3.2. 4.3.1.1 4.67	3.31	2.5.00 2.3.3.33 2.67	3.25	1.00 2.67 3.67 2.33	2, 42	2.00 3.67 3.00	1.42
	و: : ت	Number.	0000	0	0000	0	0000	0		
	80 and larger.	.tdgis777	Lbs.oz. 0 0 0 0 0 0 0 0	0	0000	9	0000	0	1 0 0 0 2 0 0 0 3 0 0 0 3 0 0 0 4 0 0 0 1 0 0 0	
-	. !	Number.	000=	0.3	8000	0.5	0000	0		
	96	Weight.	Lbs.oz. 0 0 0 0 0 0 0 0 0 0	0.3	1000 4000	0.3	0000	0		
		Number.	8001	-	H000	0.3	0000	-		:1
-	112	Teight.	Lbs. oz. 1 13 0 0 0 0 0 10	9 .0	8000	0.1	11 11 00 0 0 0 0	0.4		
		Number.	1006	က	4-02	8	1000	-		
-	126	Weight.	Lbs. oz. 0 9 0 0 5 0	1.4	1000 1000	1.3	1000	0.4		
		Number.	0,800	10	12	6	0000	4		
	150	.trigib777	Lbs. oz. 16 1 0 0 3 14	5.3	α00α ααα4	4.4	×000	2.1		
		Number.	54 0 0 0	18	138 88	16	170 17	00		
Sizes.	176	Weight,	Lbs. oz. 26 0 4 6 0 0 4 1	8.6	2 2 2 3 2 4 2 1 2 1 2 4 2 1 2 1 2 1 2 1 2 1 2 1	6.7	7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3, 4		
002		Zumber.	79 32 10 14	34	22 40 30 75	4.2	1322	11		
	200	.7Teight.	Lbs.oz. 333 8 13 12 4 8 5 14	14. 4	8 12 14 15 13 5 29 10	16, 7	9 4 0 12 1 4 6 9	4.5	1 1 1 1	
		Number.	27 27 8 8	53	. 512	56	17 8 19 19	=		
	216	.Teight.	22. 3 10. 3 8. 4 2. 14	10.9	20 112 3 3 14 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	9.4	0000 0000	3.9		
		Number.	66 4 4 4	43	98.85 14.05	42	1242	16		
	250	.tdgio777	Lbs. oz. 14 8 18 15 23 15 1 4	14.7	22 12 22 12 4 8	14.1	8 4 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	8.4	1 1 0 1 1 1 0 1	
	7 i	Number.	42 155 245 1	=======================================	1882	19	9823	26		
	288 and smaller.	Weight.	Lbs.oz. 11 11 35 7 67 9 0 4	28.7	0 4 12 1 3 10 0 0	4.0	241 2312 2312 2322	6.0		
		Number.	326 335 58	268	83 216 167 160	157	86188	78	36	15
	Total	Teight.	Lbs. oz. 130-15 88-12 106-0 25-5	87.8	33 14 68 5 60 4 65 10	57.0	40 2 25 3 10 15 25 13	25.5	42 11 0 41 11	2.1
	Rank, tree number, strain,		91, tree No. 23-89-4, Unproductive strain—Continued. Total crop— 1912. 1913. 1914.	A verage	92, tree No. 23–77–18, Valencia strain: Orethard grade— 1912. 1913.	Average	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912 1913 1914 1914	Average

4 6 10	9							21 88 44	46		
1. 3. 22 2. 56 2. 67	2,36	1.00 2.33 3.00 3.67	2.50	1, 00 1, 00 2, 67 2, 33	1.75	2.33 (b)	1.44	1.11 1.38 2.67 3.00	1.97	1.00 5.00 5.00	3, 83
0000	0	0000	0	00				00		0000	0
0000	0	0000	0	00				::00		0000	0
0000		0000		00				00		0000	
8000	0.5	0000	0	00				00		8000	0.5
1 0 0 0 0 0	0.3	0000	0	0 0				0 0 0		1 0 0 0 0 0 0	0.3
4000	П	0008	0.5	00				50		41000	2
8000	70	0000	3	::00				100		9800	4.
8000	0	0001	0	00			:	0-1		8000	_
8010	က	0000	0.5	0 %				0.0		2000	2
11000	1.8	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.3	0 0				2 14		13022	8
1004				0 4	:					1408	
35	14	4 0 11	4				_:	150		1000	00
0 0 8 8 9 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	6.6	0000	1.8	0 0 114				0 0		4 0 0 8 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	4.3
30 1 9 9 1 8	23	2204	2	30	:			34		115 0 0 12	10
7224	-	15 10 13	6	122:	:			112		117 0 0 9	oc
20 20 20	10.	0001	0	130	:		<u>:</u>	150		8000	4.
933 4 92 833 6	53	0000	2	24				33.3		26 20 9	16
18 0 15 11 14 9 36 3	21.1	0008	0.9	1 3 9 11				13 3		10 13 8 9 3 4 3 12	6.6
32 44 43 30	37	1222	က	25	:			14	:	111 42 42 6	20
11100	က	2112	0.	144	<u>:</u>		<u>:</u>	400		91110	20
11 17 10	13.	0000						100		2573	7.
20 72 72 26	58	33 0	4	59				17.		111 322 70 1	29
6 5 34 1 8 0	19.0	0140	1.4	18.14				23 3		3 9 10 12 24 14 0 5	9.6
113	46	0000	13	268			:	318		. 28 194 0	22
13	9.9	0670	3.5	13.2				13.62		010	9.5
37.62		0000		67	:		:	810	:	17 20 0	16.
193 353 207 243	249	99 29 29	29	240 176 341 104	215	0 11 7 3 3	5	249 196 415 136	249	86 136 313 42	144
78 0 96 1 72 7 92 2	84. 6	4 0 3 4 119 11 13 4	10.1	98 12 55 1 92 0 41 5	7.18	0 1 1 8 0 2 0	0.7	102 12 59 13 112 14 54 11	82. 5	36 3 52 9 100 15 19 0	52.1
Total crop 1912 1913 1914 1914	Average	93, tree No. 23-88-5, Rough strain. Orchard grade— 1912. 1913. 1914.		Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1915	Average	Total crop— 1912 1913 1914 1915	Average	94, tree No. 23-89-5, Unproductive strain: Orchard grade— 1912 1913 1914	Average

b No count was made to determine the seed content of the fruits in this group. a Result of the examination of three Rough-strain fruits.

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

əldgi	of var uits,	Number It	::::	:		:	29 81 12	13		:
	number per fruit	A verage	2.00 3.67 6.67	3.52	1. 67 . 67 1. 33 (a)	.92	1.56 3.11 5.83	3.15	1.33 3.33 4.00 7.33	4.00
	٦.	Number.	0000	0			0000	0	0000	0
	80 and larger.	Teight.	Lbs. oz. 0 0 0 0 0 0 0 0	0			0000	0	0000	0
		Number.	0000	0			8000	0.5	2000	2
	96-	Weight.	Lbs. oz. 02. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0			1000	0.3	4 10 0 0 0 0 0 0	1.2
		Number.	4000	-			×200	3	10000	-
	112	Weight.	Lbs. oz. 2 6 0 0 0 0	0.6			4 12 0 0 0 0 0 0	2.0	8000	0.8
		Number.	1000	0.3			2000	3	8000	0.5
	126	Weight.	Lbs. oz. 0 0 0 0 0 0	0.1	0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1		1 11 0 0 2 13	1.4	0000	0.3
		Number.	20	9			1001	14	12402	1-
	150	Weight.	Lbs. oz. 11 0 0 10 0 0 0 0	3.0		:	16 8 2 0 5 1	7.3	10 14 2 1 0 0 1 0	3.5
		Number.	17 1 0 15	oc			32 15 10	14	11404	7.0
Sizes.	176	Weight.	Lbs. oz. 8 4 0 7 0 0 6 13	3.9			15 2 7 2 0 0 12 6	8.7	5 4 1 14 0 0 1 12	2.2
002		Number.	14 6 21 21	=		:	40 26 27 27	26	12 19 26 26	17
	200	Weight.	Lbs. oz. 6 0 2 9 0 14 8 9	4.5			16 13 11 2 14 2 12 5	11.1	4 14 7 10 4 0 10 8	6.8
	-	Number.	24229	6			8488	53	. 38832	23
	216	Weight.	Lbs. oz. 3 10 0 14 0 12 8 10	3.5			7 3 8 9 17 8 10 10	11.0	0 12 11 8 14 14 6 2	8.3
		Number.	138.6	6			17 35 83 17	33	144	28
	250	Weight.	Lbs. oz. 2 1 1 0 4 4 4 5 0	3.1			5 10 29 2 5 5	13.0	0 6 114 2 20 1 2 15	9.4
	٠ ٢.	Number.	34 8 8	8			112 60 8 8	11	2522	44
	288 and smaller.	.tdgisW	Lbs. oz. 1 11 6 8 8 0 8 1 1 14	4.5			3 2 13 10 64 1 1 14	20.7	0 8 25 14 0 8	11.8
		Number.	78 51 85 85	65	0100	22	196 226 374 127	231	62 188 191 61	126
	Total.	Weight.	Lbs. oz. 35 9 12 0 13 14 31 6	23.2	16 4 6 1 4 0 0	5.4	87 13 68 15 116 1 50 6	80.8	31 6 57 9 64 13 22 13	44.1
	Rank, tree number, strain,		94, tree No. 23-89-5, Unproductive strain—Continued. Standard grade— 1912. 1913. 1914.	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912 1913 1914 1914	Average	95, tree No., 23-89-6, Unproductive strain: Orehard grade— 1912 1913 1914 1915	Average

		1		22 23 25 2	10						
		1	111	ļ	30						:
1.33 2.67 2.67 4.67	2.84	0.4.33 5.33	3.00	3. 44 3. 00 5. 78	3. 28	0 1.67 1.00 3.33	1.50	3.00	2.17	0 1.33 1.67 3.00	1.50
0000	0			0000	0	0000	0	0000	0		
0000	0		:	0000	0	0000	0	0000	0		
0000	0		-:	0000	82	0000	0	0000	0		
0000	0		-:	2000	22	0000		0000	0		
0000				4000	1.	0000	0	0000			
2000	က		:	17000	4	0000	0	0.000	0		1 :
0000	1.8			4000	2.5	0000	0	0000	0		
1000	-		:	1000	82	0010	e	0000	0		-: -:
41 0 0 0			:	41000	0	0000	2 0.	0000	0		1 : II :
2000	0.7			8000	1	0000	0	0000			1 : 1
8000	9			4400	13	1000	0.3	0000	0		
12 0 0 0 0 0	3.1			23 1 0 0 1 1 0 0 0	6.6	8000	0.1	0000	0		
103	œ			29 29 14 29	13	9044	2	-00-	0.5		
11. 44.	3.7			15 40	6.0	4000	1.0	7007	0.2		
17 8 0 0 10 1 28 4	14		:	29 13 19 2 19 1 54 6	30	10 10 10 10 10 10	2	4020	2		
			-:								
7 5 0 0 4 0 10 11	5, 5			12 3 7 10 8 0 21 3	12.3	4-160	2.7	11 11 0 0 0 0	0.7		
10 8 10	15		:	12 35 43 58	37	20 4 6 12	14	70 H 01 00	33		
22220	5.1		:	80000 110000	13. 4	9 41 9	4.8	0 9 4 0	1.1		
13111131113			:	4 112 116 119		6831-7		2001			
01154	23			11 555 53	20	35 114 100 56	53	10 18 21 21 21 21 21 21 21 21 21 21 21 21 21	13		
3 10 3 6 8 5 12 15	7.1			4 0 17 8 28 6 15 14	16.5	11 10 4 5 3 13 15 12	8.9	3 6 0 8 6 13 6 13	4.4		
0 47 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	30			1 159 124 10	74	20 198 19 90	83	19 93 82 367	140		
13320	6.5		:	∞∞-1-0	18.3	12000	18.5	H7044	30.1		
5 9 15 0 15 1	6	25 12 12 13 13 15 15 15 15 15 15 15 15 15 15 15 15 15	2	0 9 3 5 5 2 2 2 2 2 3 5 5 5 5 5 5 5 5 5 5 5		20 5 20 5 20		9 16 16 21 21 27 79		883 44 35 45 35	42
130	66		32	186 360 274 203	256	92 219 46 46 175	133	39 104 392	8 158	1	2
45 12 20 1 24 8 43 9	33, 5	3051	2.5	78 2 82 10 89 14 69 13	80.1	32 0 48 6 18 4 45 15	36. 1	12 9 17 3 29 15 87 8	36.8	12 12 5 7 0 8 5 15	6.5
Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912 1913 1913 1914	Average	Total crop— 1912 1913 1914 1914	Average	i, tree No. 23–85–1, Small Yellow Strain: Ovebard grade— 1912 1913 1914	Average	Standard grade— 1912 1913 1914 1914	Average	Cull fruits— 1912 1913 1914 1914	Average

a No count was made to determine the seed content of the fruits in this group.

Table I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

əldsi	nev lo stin	Number fr	46 59 63	43		_:				:
lo .	number Jiuni rəq	Average seeds	2.11 1.67 3.11	1.88	. 33 3. 00 2. 00 3. 67	2.25	3.67 3.00 2.67	2.42	. 67 2. 33 2. 67 3. 33	2.22
	P.:	Number.	0000	0	0000	0	0000	0		
	80 and larger.	Weight.	Lbs. oz. 0 0 0 0 0 0	0	0000	0	0000	0		
		Number.	. 0000	0	4000	1	0000	0		
	96	Weight.	Lbs.02. 0 0 0 0 0 0 0 0	0	0000	0.8	0000	0		
		Number.	0000	0	. 0000	2	4000	1		
	112	Weight.	$\begin{array}{c} Lbs.oz. \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{array}$	0	3 10 0 0 0 0	6.0	8000	0.6		
		Number.	0,0 +0	0.3	8000	0.5	2000	0.5		
	126	Weight.	Lbs.oz. 0 0 0 10 0 10	0.2	1000 000 000	0.3	0000	0.3		
	,	Number.	1000	0.3	155	4	8000	9		
	150	Weight.	Lbs. oz. 0 8 0 0 0 0 0 0	0.1	7 11 0 0 0 0	1.9	12 4 0 0 0 0	3.1		
		Number.	2 - 10	က	16 0 0	4	14000	4		
Sizes.	176	Weight.	Lbs.oz. 3 5 0 0 0 9 0 13	1.2	7 8 0 0 0 0	2.0	6 12 0 0 0 0 7	1.8		
52		Number	41 88 7	∞	28 4 3 9	Ξ	2007-	5		1
	200	Weight.	Lbs.oz. 5 13 1 2 4 1 2 8	3.4	3 10 1 1 1 10 10 8	4.2	7 13 0 0 0 12 0 6	2.2		
		Number.	25 11 24	16	1 8 36 36	17	72 161	7		
	216	Weight.	Lbs.oz. 9 9 1 12 4 12 7 9	5.9	0 2 12 8 2 2 12 6	5.9	2 12 0 11 0 6 6 12	2.6		
		Number.	45 116 228 77	42	41 41 41	32	54855	18		
	250	Weight.	Lbs.oz. 15 0 4 13 10 10 22 9	13.3	1 4 6 4 22 2 12 13	10.6	2 0 1 8 2 8 16 11	5.7		
	id ir.	Number,	39 291 101 457	222	170 170 28	65	86 47 54	84		
	288 and smaller.	Weight.	Lbs.oz. 10 6 57 14 27 9 100 0	49.0	0 4 15 1 48 15 7 9	18.0	0 12 17 1 11 3 13 8	10.6		
		Number.	175 398 154 602	332	58 94 133	136	77 93 58 129	68	128 8 01	27.
	Total	Weight.	Lbs. oz. 57 5 71 0 48 11 139 6	79.1	28 6 25 9 80 13 43 4	44.5	35 13 19 4 14 13 37 12	9.92	4 8 8 1 1 1 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 0	3.0
	Rank, tree number, strain,	and from the	96, tree No. 23.85-1, Small Yel- Iow strain—Continued. Total crop— 1912 1914 1914	Average	97, tree No. 23-91-3, Unproductive strain: Orchard grade— 1912 1913 1914 1915	Average	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1916	Average

31 22 22	16		:		1 :		:	8 29 29 105	90		:
3. 22 3. 22	2.31	1.00 1.67 2.67	1.50	.33 3.00 .67	1.00	0 0 1.00	. 42	.33	1.00	33 133 3.00	1.42
0000	0	0000	0	0000	0			0000	0	0000	0
0000	0	0000	0	0000	0			0000	0	0000	0
0000		0000		0000			:	0000		,0000	
4000	~	0000	0 0	0000	0			0000	0 0	0000	0 0
8000	0.8	0000		0000	0			0000		0000	
0000	က	0000	0	0000	0.			0000	0	0000	0
8000	1.5	0000	0	0000	0			0000	0	0000	0
9000		0000		0000	0			0000		0000	
4000	-	0010	2 0.3	0000	0			0010	2 0.3	0000	0
0000	0.5	0000	0.5	0000				0000	0.2	0000	
8000	10	1088	-	1001	0.5			೧೦೧೮೧	62	1000	0.3
2000	2.0	0000	0.7	6006	0.3		:	2000	1.0	8000	0.1
000		00 1		0000				1011			0
30	∞	01110	-	8008				. 22 - 44	2	2000	22
44 0 0 0 0 7	3.8	0001	0.5	1000	0.5			1 8 0 7 0 8 1 12	1.0	2 6 0 0 0 15	0.8
27 3 6 6 29	16	10101	5.	4018	ಣ			12.953	6	13 0 0 21	6
146	6.4	55 5 4 T	2.3	112	1.3			1221	3.6	4000	3.5
11021		8088		100%			:	4029		10000	
25.23	24	99911	2	400%	10			00 94	17	111	Ξ
19 2 8 8 7 2	8.5	2 2 2 4 8 4 0 1 2 2 2	2.8	1000 1000 1000	3.5			22 2 3 12 4 2 10 4 2 1 1 4 4 1 1 4 4 1 1 4 4 1 1 4 4 1 1 4 4 1 1 4 4 1 1 4 1 4 1 1 4 1 4 1 1 4 1 4 1 1 4 1 4 1 1 4 1 1 1 4 1	80	4, 1 0, 12 10, 10	4.2
10 25 25 25 25 25 25 25 25 25 25 25 25 25	20	11 11 16	14	8092	21			20 116 177 86	35	301113	19
4 5112 8 100 8 100	65	07-04	9.	4026	10		:	47.27		218 012	2
25 24 7 3	16	410000	4	2022	9			26 55	11	D-889-0	9
4 148 217 82	113	7 239 172 13	108	82988	92			332 263 106	184	37 149 89 52	82
31 32 20 21 21	28.6	1 14 55 9 40 14 3 7	25.4	7 3 118 5 12 6	16.2			9 1 73 14 57 15 25 13	41.7	9 13 31 6 25 1 14 11	20.2
146 265 324 272	252	33 264 198 52	137	93 98 208	111	64 46 20	44	126 421 342 280	292	90 164 101 135	123
1000	4	0 × 5 5	5	P1200	4.	8 4 270	7. 2	6120		14 6 7 7	0.
68 49 82	74.	11 64 51 17	36	15 18 19 60	28	57.000	7	88 75 81	72	29 36 44	35
Total crop— 1912 1913 1914 1915	Average	98, tree No. 23-98-1, Yellow strain: Orchard grade— 1912 1913 1914	Average	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912 1913 1914 1914	Average	99, tree No. 23-89-11, Unproductive strain: Orchard grade— 1912 1913 1914	Average

TABLE 1.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

1	əldsi	of var wits.	Zumber fr	* · · · · · · · · · · · · · · · · · · ·	:			0 124 5 16	36	::::	
	lo	number per fruit,	Arerage sbeeds	0.33 3.00 1.00 .67	1.25	0 1.00 .67 2.67	1,03	1.78 1.78 2.11	1.25	1.67 6.00 1.33 5.33	3.58
		7 2	Number.	0000	0			.0000	0	0000	0
		s0 and larger.	Teight.	Lbs. oz. 0 0 0 0 0 0	0			0000	0	0000	0
1			Zumber.	0000	0		:	0000	0	H000	0.3
		96	Teight.	Lbs. oz. 0 0 0 0 0 0	0			0000	0	0000	0.4
			Zumber.	0000	0		:	0000	0	8000	-
	·	112	.tdgis77	Lbs. oz. 0 0 0 0 0 0	0			0000	0	1 12 0 0 0 0 0 0	0.4
•			Zumber.	0000	0			0000	0	0000	-1
		126	.tdgis77	Lbs. oz. 0 0 0 0 0 0	0			0000	0	000 12000	0.4
			Number.		0.3			0000	0.5	8008	4
		150	.Teight.	Lbs. oz. 0 8 0 0 0 0 0 0	0.1			1000	0.3	0000	
			Number.	0004	-			10000	8	4002	-
	Sizes.	176	.tdgis77	Lbs. oz. 0 0 0 0 1 13	0.5			2 0 0 0 0 0 12 T2 T2	1.2	8000 8001	1.9
	70		Number.	0000	-		:	20003	10	8121	0
-		200	Teight.	20.02.02.00.00.00.00.00.00.00.00.00.00.0	0.5			5 6 0 0 10 7	4.0	0014 7048	3.9
			Number.	44-4	3			34 a 5 a 5 a 5 a 5 a 5 a 5 a 5 a 5 a 5 a	14	13.22	12
		216	Weight.	Lbs. oz. 0 6 0 6 1 8	0.9			5 9 1 14 1 2 12 2	5.2	2 15 0 12 10 4 4 10	4.6
			Zumber.	r-4408	Ξ			85448	30	49 49 7	161
		250	Teight.	Lbs. oz. 2. 6 1 0 1 4 9 3	3.5			10 2 4 8 4 14 118 15	9.6	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	6.8
		or.	Number.	20 112 49 111	73			57 261 138 163	155	141 90 2	59
		288 and smaller.	Teight,	Lbs. oz. 5 13 20 4 9 14 24 4	15.1			15 10 51 10 34 15 38 15	35.3	0 8 32 10 26 4 0 8	15.0
			Number.	32 117 54 154	88	21 168 37 25	63	143 449 192 314	275	67 161 167 40	109
		Total	Teight.	Lbs. oz. 10 3 21 10 11 8 38 12	20.5	5 6 12 4 13 4 13	5.4	45 6 64 12 45 11 88 0	61.0	29 8 39 4 55 12 15 9	35.0
		Rank, tree number, strain,		99, tree No. 23-89-11, Unproductive strain—Continued. Standard grade—1912—1912—1913—1914—1915	Average	Cull fruits— 1912 1913 1913 1914	Average	Total crop— 1912 1913 1914 1915	Average	100, tree No. 23-89-3, Unproductive strain: Orchard grade— 1912 1913 1914 1915	Average

::::1		:::::	:	4 6 15	10	11111			:		:
1.33 3.50 6.67	3.96		2.25	1.44 4.37 2.67 4.67	3.26	1.33 3.00 4.00	2.58	2.67 5.03 3.67 4.67	4.0)	. 67 2. 00 5. 00 4. 00	2.92
0000	0		ΞÏ	0000	0	0000	0	0000	0		
0000	0			0000	0	0000	0	0000	0		
0000	0			1000	.3	1000	. 3	0000	0		
0000	0			0 0 0 0 0 0 0 0 0	0.4 0.	0 0 0 0 0 0 0 0 0	0.5	0000	0		
9000	2			0000	2	1000	.3	8000	0.5		
3 12 0 0 0 0 0	6.0			000	1.4	0000	0.2 0.	000	0.3		
1000	.3		:	1008		1000	£.	1000	.3		
0000	0.1 0.			0 0 0 0 1 1 1 2 0 0 0	9.0	0000	0.1 0.	×000	0.1 0		
0000			:	0001	-	0000		0000			-:
0000	3			2002	9	9004	3	113	4		
0000	1.3			11 7 0 0 0 0 1 0	3.1	8002 4000	1.6	010	2.2		
8004	8			80022	2-	123 17	7	E0 70 4	9		
3 15 0 0 0 0 1 10	1.4			0002 8,00%	3.3	0103	2.9	6 5 0 0 1 12	2.6		
13008	<u>∞</u>			243 1 8 2 43	18	4 6 0 9 4 4 6 9 4 4 6 9 9 9 9 9 9 9 9 9 9 9 9	17	12 0 4 16	x		
0000	77			1841	4	010 8 41	00	5205	8		
8000	65			81 0 1 6	2	1 8 4 7 1	9	4019	3		
14 0 5 24	Ξ			32 22 37 37	23	18 171 34	18	92	10		
5 0 0 1 1 8 8 9	3.9			8 4 0 12 12 2 13 3	8.6	0 6 5 15 6 13 12 1	6.3	3 . 7 0 . 5 1 . 4 9 . 6	3.6		
2002	11			55558	30	22 32 32	26	8 16 39	17		
0128	3.3		:	13.21.5	10.1	0 6 7 7	8.4	11444	5.4		
4300			-:	8976		150		21.02	_		
13 10 2	22			202 100 4	80	0 67 34 5	27	232 6	21		
3 9 11 10 3 2 0 8	4.7			44 4 29 6 1 0	19.7	0 . 0 17 10 9 4 1 6	7.1	0 15 11 3 5 10 1 9	4.8		
78 65 24 69	59	88 0 9 6 10 88	26	171 287 201 115	194	21 145 86 136	97	62 57 54 91	99	r £4 r 4	15
32 14 15 5 23 6	19.9	7 9 4 14 1 7 0 10	3.6	69 15 56 7 65 5 39 9	57.8	10 5 42 13 29 15 49 13	33.2	27 5 12 12 17 12 31 4	22.3	2 12 2 12 1 13	2.1
Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1914	Average	Total crop— 1912 1913 1914 1915	Average	101, tree No. 23-39-4, Unproductive strain: Orchard grade— 1913. 1913. 1914.	Average	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1914	Average

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

oldsir	nev lo stim	19dmuN	00 00 18 18	12	::::	:				
	number 1	Average seeds	1.56 3.33 4.22	3.17	1.33 5.33 5.33	3.58	2.00 5.00 1.67 4.33	3.25	4.00 1.00 6.33	3.83
	ಶ್ವ	Number.	0000	0	0000	0	0000	0 .		1
	80 and larger.	"Teight.	Lbs. oz. 0 0 0 0 0 0	0	0000	0	0000	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
		Number.	1000	0.3	0000	0	0000	0		:
	96	Jugie77	Lbs. oz. 0 11 0 0 0 0 0 0	0.3	0000	0	0000	0	3 B C C C C C C C C C C C C C C C C C C	
		Number.	8000	-	0000	0	0000	0		
	112	.tdgie777	1 15 0 0 0 0 0 0	0.5	0000	0	0000	0		
		Number.	0000	0.5	0000	0	0000	0		1
	126	.tdgis7/	Lbs. oz. 1 1 1 0 0 0 0 0 0	0.3	0000	0	0000	0	8 9 9 1 8 9 9 9 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	
		Number.	00 8 4	1	6010	22	1000	2		
	150	Teight.	Lbs. oz. 10 7 0 0 1 8 2 0	3.5	4000 80%0	1.2	8000	6.0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
		Number.	20 19 19	13	15 0 0 7	9	400100	2		1
Sizes.	176	Teight.	Lbs. oz. 9 8 0 6 3 14 8 2	5.5	8106	2.8	1 1 1 1 4 1 1 4 1 1 1 4 1 1 1 1 1 1 1 1	1.0		
01		Number.	16 14 62 62	52	16 33 34	19	401.0	4		:
	200	.tdgio77	Cbs. oz. 6 9 3 5 6 4 24 3	10.1	6 11 10 8 13 2	7.9	2 2 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.7	* * * * * * * * * * * * * * * * * * * *	
		Number.	2288	27	25 22 22	91	98-16	50		
	216	.tdgiə77	Lbs. oz. 3 13 6 4 8 1 21 7	9.6	1 8 5 5 7 14 7 14	6.1	3 0 0 11 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1.6		
		Number.	8 54 38 71	43	1 23 16	21	1188	00		
	. 250	"Jugio77	Lbs. oz. 2 11 16 13 13 2 22 6	13.8	0 6 17 12 8 10 5 7	8.1	3 13 2 7 4 15	3.3		
	pg.	Number.	4 119 57 11	48	12 22 12	23	208	27		:
	288 and smaller.	Teight.	Lbs. oz. 0 15 28 13 14 14 2 15	12.0	0 4 14 14 6 12	6.3	172 1 2 1 2 1 1 2 1 1 1 1 1 1 1 1 1 1 1	6.3		1
		Number.	90 245 147 231	178	46 131 96 91	16	39 27 44	20	5101	19
	Total	Teight.	Lbs. oz. 40 6 58 1 48 14 83 0	57.6	19 12 39 1 37 12 33 0	32. 4	15 1 20 9 9 2 13 12	14.6	73 E = 11 4 4 4 8	5.3
	Rank, tree number, strain,	פרמינה מחוד לימוי	101, tree No. 23-93-4, Unproductive strain—Continued. Total crop— 1912 1913 1914	Average	102, tree No. 23–75–20, Unproductive strain: Orchard grade— 1912 1913 1914	A verage	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912. 1913. 1914. 1914.	Average

0 112 27	13				:			34 10 8	71		
5.33 5.33	3.52	6.33 6.33	3.33	2.50 6.67 5.67	3.88	1.67 4.33 1.67 1.67	2.34	3.00 4.44 4.56	3. 19	0 0 0 1.33	.33
0000	0	0000	0	0000	0			0000	0	0000	0
0000	0	0000	0	0000	0			0000	0	0000	0
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	0	0000	0	0000	0			0000	0	0000	0
0000	0	0000	0	0000	0	1 1 1 1		0000	0	0000	0
0000	0	2000	-	0000	0		:	2000	П	0000	0.5
0000	0	2000	0.8	0000	0			0000	0.8	0004	0.4
0000	_				-			8000	<u> </u>	0001	-
0000	0	8008		0000	0 0			8008	7	0001	0.3
0000	0	1 13 0 0 1 2	0.7	0000		1 1 1 1		1 13 0 0 0 0 1 2	0.7	0000	0.1
160	4	41 10 4	20	1000	0.3			150	5	1004	-
7 14 0 0 0 8 0 0	2.1	2 0 0 2 0 0	2.5	6000	0.1	1 1 1 1		8000 0000	2.7	000%	0.6
100	6	11 0 4	4	0000	0			11104	4	. 0000	0
0004	3.8	4804	1.4	0000	0			4804	1.9	0000	0
8004		70001		0000				2001		0000	
8.88	23	20	Ξ	10071	2			12 8 61	13	0104	-
13 12 2 5 · · · · · · · · · · · · · · · · ·	9.6	8 4 0 14 7 7 7	4.2	0 6 0 0 2 14 0 7	0.9			8 10 6 14 3 4 7 14	5.2	0001	0.5
10 12 25 31	21	16 4 4 8 1	Ξ	0000	2	1 1 1 1 1		16 10 21 21	1.3	0000	0
3 11 6 0 10 4 11 0	7.7	6 0 2 12 6 8	4.2	7000	0.5			6 0 1 6 3 12 7 10	4.7	0000	0 0
112 64 33 1	35	17 6 22 20	17	2000	1-			119 255 255	24.	0000	0
	63	11211	7	2000				P-1010	00	0000	0
4 8 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	11.	50100	5.	0 1 2 1 1 1	2.			9 14 17 1	7-	0000	0
8 137 33 21	20	, 10 16 65 8	25	27.75.75.70	17.			12 100 13	42	0001	0.3
0.00 m	12.5	35 25 25	7.1	25.00	3.7			80112	10.9	0000	0.1
222		2461		0481						0000	!
100 261 134 134	160	96 30 98 74	75	63 63 14	28	15.5	14	136 72 164 91	116	100	4
40 1 62 14 48 2 58 4	52.3	40 10 9 6 31 2 27 8	27.2	2 4 18 4 4 4	7.4	9 9 1 8 0 15 0 10	3.2	52 7 15 14 50 5 32 6	37.8	0000	1.6
Total crop————————————————————————————————————	Average	103, tree No. 27-84-12, Smooth strain. Orchard grade— 1912. 1913. 1914.	Average	Standard grade— 1912 1913 1914 1915	Average	Cull fruits— 1912 1913 1914 1915	Average	Total crop— 1912 1913 1914 1915	Average	104, tree No. 37-57-25, Barren strain. Orchard grade— 1913 1914 1915	Average

a No count was made to determine the seed content of the fruits in this group.

14648°—18—Bull. 624——7

TABLE I.—Detailed statement of the annual performance of Valencia orange trees for which records were obtained for four years, 1912 to 1915, inclusive—Con.

able	insv 10 stiu:	19c'muV					25.000	6		
îo	number per fruit.	Average seeds	1.00 2.00 1.00 4.00	2.00	.67	.17		1.12	$\begin{pmatrix} a \\ a \end{pmatrix}$	0
	r.	Number.	0001	0.3			0001	0.3	0000	0
	80 and larger.	Weight	Lbs. oz. 0 0 0 0 0 0 0 0 0 13	0.2			0 0 0 0 0 0 0 13	0.3	0000	0
		Number.	000-	0.3			.000-	0.3	0000	0
	96	Weight.	Lbs. oz. 0 0 0 0 0 0 0 0 0 11	0.2			0 0 0 0 0 0 0 11 0	0.2	0000	0
		Number.	8008	-		:	4000	63	0000	0
	112	Weight.	Lbs. oz. 1 4 0 0 0 0 1 12	0.8			.1 4 0 0 3 0	1.1	0000	0
		Number.	нон	-			1102	1	0000	0
	126	Weight.	Lbs. oz. 0 9 0 11 0 0 0 0	0.5			0 0 0 11 0 0 1 2	0.6	0000	0
		Number.	40001	-			2002	က	0000	0
	150	Weight.	Lbs. oz. 2 2 0 0 0 0 0 0	0.7			2 10 0 0 2 8	1.3	0000	0
		Number.	- 4048	-			10-12	-	0000	0
Sizes.	176	Weight.	Lbs. oz. 0 8 0 0 0 7 0 7 0 15	0.5			0 8 0 0 0 7 0 15	0.5	0000	0
02		Number.	0110	0.5			0214	82	0100	0.3
	200	Weight.	Lbs. oz. 0 0 0 0 7 0 0 6 0 0	0.2			0 0 0 15 0 6 1 9	0.7	0000	0.1
		Number,	1000	-		1	1080	н	0000	0
	216	Weight.	Lbs. oz. 0 0 0 12 0 0	0.3			0 0 0 0 0 0	0.3	0000	0
		Number.	0000	2			0000	82	0000	0
	250	Weight.	Lbs. oz. 0 . 0 1 2 0 0 0 0 0 14	0.5			0 0 0 0 0 14	0.5	0000	0
	r.	Number,	00.00	2			0001	8	0000	0
	288 and smaller.	Weight.	Lbs. oz. 0 0 0 0 0 0 0	0.5			0000	9.0	0000	0
		Number.	6 4 4 7 7 7 7 1 2 1 2 1 2 1	10	7122	6	35 17 31	22	0100	0.3
	Total.	Weight.	Lbs. oz. 4 13 4 13 1 9 6 2	4.2	7.00 7.84 1.00	2.4	12 12 5 4 1 13 13 4	80.33	0000	0.1
	Rank, tree number, strain, grade, and year.		104, tree No. 37–57–25, Barren strain—Continued. Standard grade— 1912. 1913. 1914.	Average	Cull fruits— 1912 1913 1913 1914 1915	Average	Total crop— 1912 1913 1913 1914 1915	Average	105, tree No. 37–58–26, Barren strann. Orchard grade— 1912. 1913. 1914.	Average

			. 1	0 0 0 0	11
			:		
$\begin{array}{c} 2.67 \\ 0 \\ 3 \end{array}$	1.89	$\begin{array}{c} .67 \\ (a) \\ (a) \\ 1.34 \end{array}$.67	1.67 0 0 2.50	1.79
0000	0			0000	0
0000	0			0000	0
0000	_			0000	
0000	0			0000	0
0000	0	1 1 1 1		0000	0
0000	0		-:	0000	0
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0000			_:	0000	
0000	0			0000	0
0000	0			0000	0
000=	.3		:	0001	63
000%	0.1 0.	1 1 1 1	:	0000	1 0
0000	0			0000	0.
1000	0.3			1000	0.3
9000	0.1			9000	0.1
0001	60			0-0-	20
	0				0
0000	0.1			0000	0.3
8000	-	1 1 1 1	:	8000	-
0000	60		:	8000	80
1000	0		:	- 0000	0
0000	0			0000	0
0000	0			0000	0
			-	0000	
2004	ಕಾ			2004	63
0 1 0 0 0 0 0	0.8			0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.8
9909	70	04004	12	94 9 0 10 10	16
17041	.3	. 2002 2002	2	41 10 13 13	2-
8101		L000	2.	0000	m
Standard grade— 1912 1913 1914 1914	Average	Cull fruits————————————————————————————————————	Average	Total crop— 1912 1913 1914 1915	Average

a No count was made to determine the seed content of the fruits in this group,

In each succeeding year of these investigations, the workers became familiar with an increasing number of variable forms of fruits and recorded their occurrence as they were observed. This accounts for the general increase from year to year in the number of such fruits recorded. Because of this increase in the number of variable forms observed, the figures given here as the average annual production of such fruits are too low, especially for those trees which have borne a large number of such variable fruits. When securing performance records, late-bloom fruit and split fruit have been recorded, but such fruits have not been included with the variable fruits.

In expressing the average of weights in Table I, it was found impracticable to retain more than one decimal place. The more exact expression of ounces as a fractional part of a pound extends to four decimal places, but only one place has been retained. In expressing the averages for the number of fruits occurring in different groups, no decimal has been retained except when the average number is less than unity. Hence, it will be found that the totals of averages sometimes will vary slightly from the average of the totals of the corresponding number.

In recording the tree-performance data the fruits of the Cull grade are not assorted into sizes, and on this account the total figures for the weights and numbers of fruits of the various sizes represent only the commercial crops of the trees.

In determining the average number of seeds per fruit on the different trees counts are made when possible from a small, a medium, and a large fruit in each of the three grades. In this way a record is usually secured of the actual number of seeds in 9 fruits from each tree, and it is thought that this system gives a fairly accurate indication of the relative seediness of the fruits of the different trees. To determine the annual average number of seeds per fruit, the total number of seeds found is divided by the total number of fruits examined during the entire period. In the case of trees from which less than 9 fruits have been examined during any season the average obtained in this way gives equal weight to each fruit and is fairer and more accurate than to average the yearly averages.

In counting the variable fruits occurring on individual trees, the strain of each tree is considered the standard for that tree, and all deviations from it are considered as variable fruits. For example, on a tree of the Valencia strain all fruits other than those of the Valencia strain are considered to be variable for that tree, while on a tree of the Corrugated strain all fruits other than those of the Corrugated strain are counted as variable. With the trees of the Sporting strain, however, the fruit of the Valencia strain is considered to be normal, and all variable fruits are counted as off type for those trees. The

relatively large number of variable fruits recorded on a few of the Productive trees of the Valencia strain, such as those listed in ranks 1, 2, 6, 7, 10, etc., are almost entirely composed of those described briefly under the heading "Minor variations of fruits." Occasionally on one of these trees a small branch has been found bearing a few fruits of one of the major strains, but usually the variable fruits found on Productive trees of the Valencia strain are not of a character to lessen the commercial value of the crop.

The working out of methods of interpreting these individualtree performance records and of applying the knowledge gained from their study is essential. It is a simple matter to choose between healthy trees of the same age grown under identical cultural conditions when they have such widely different records as those presented for the trees listed in ranks 2 and 88 in Table I. But to make a choice between similarly grown trees with such performance records as those listed in ranks 2 and 3 is quite a different problem. The average annual production of these two trees for the four years was practically identical, 178.2 pounds and 178 pounds, but the actual yields each year varied considerably. The tree listed in rank 2 bore a gradually increasing amount of fruit during the 4-year period, while the one recorded in rank 3 bore heavily the first year, produced a lighter crop the next season, and an increasingly heavy one each succeeding year. The large number of variable fruits occurring on the tree in rank 2 is partly explained by the presence in the tree of a limb which produces fruits of the Ribbed strain. Both these trees appear to be of relatively high commercial value as crop producers and as sources of desirable bud wood for use in nursery propagation or for top-working trees of undesirable strains, and before any intelligent choice could be made between the two it would be necessary to know their performance records for one or two years more.

The annual-production records by fruit sizes for these two trees for the year 1912 when compared with the records for the succeeding years show a great variation in the proportion of fruit of the various commercial sizes in the crops of the individual trees. This variation was not due to the quantity of fruit on the individual trees, for it is equally marked on both these trees, although there is a considerable difference in the weight and number of fruit borne by them that season. The general production of oranges of large sizes during some years is well recognized by citrus growers and is thought to be the result of seasonal climatic conditions. An inspection of the annual performance records of the other trees presented herewith lends weight to this theory, for it will be found that, without exception, all the trees produced a relatively small number of small-sized fruit during the season of 1912 in comparison with the season of 1913, irrespective of whether or not the total yield during that season was larger or smaller

than in 1913. The 1915 records of many of the trees show this same tendency in a lesser degree, indicated by a relative decrease in production of fruits of the very smallest sizes, even where, as was the case with the tree listed in rank 3, the total crop for that year was larger than during the previous year.

Table II shows the percentage of fruit of the first or Orchard grade produced by each tree and the proportion of variable fruits recorded from each during the 4-year period. These percentages are calculated from the records of actual yields shown in Table I, and they are an aid in interpreting those data and in judging the relative commercial value of the individual trees both from the standpoint of crop production and as sources of desirable bud wood.

Table II.—Performance records of 105 Valencia orange trees, showing the percentages of fruits of Orchard grade and of variable fruits borne by each tree, 1912 to 1915, inclusive.

	Percentag	ge of fruits.		Percentag	ge of fruits.		Percentag	e of fruits.
Rank in Table I.	Orchard grade (by weight).	Variable (by number).	Rank in Table I.	Orchard grade (by weight).	Variable (by number).	Rank in Table I.	Orchard grade (by weight).	Variable (by number).
1	78.6 67.7 67.9 68.9 74.4 68.4 68.4 68.4 77.8 66.8 80.2 73.4 77.6 67.5 2 69.5 73.2 72.3 76.5 68.3 76.5 68.3 77.5 66.3 3 77.5 77.8 67.5 77.8 67.5 77.8 77.8 77.8 77.8 77.8 77.8 77.8 7	3.5 7.3 .5 1.3 9.2 5.3 .6 4 5.7 4.5 7 1.6 1.5 1.7 1.6 1.5 1.7 4.0 7.3 4.2 9.1 8.1 8.1 0 6.4 8 1.0 0 2.0	36	62.0 59.0 72.0 81.3 29.2 17.3 62.8 72.7 46.1 50.7 67.2 22.9 68.0 65.3 72.1 71.4 81.3 67.7 71.9 73.4 57.7 59.3 65.8 70.2 72.3 67.2 76.5 82.6 67.7 77.4	2.9 2.1 7.5 42.8 25.0 12.1 13.5 2.6.1 13.5 2.4.4 1.6.2 4.4 1.6 5.1 2.3 2.4 2.5 2.4 6.6 3.6 7.9 2.4 67.8 7.2 6.6	71	70. 6 6 72. 1 77. 6 62.0 78. 8 23. 9 918. 8 24. 4 52. 5 73. 7 79. 8 71. 2 68. 1 72. 4 65. 6 65. 6 65. 2 64. 9 8 50. 6 65. 1 45. 6 69. 8 50. 6 67. 4 60. 6 57. 4 60. 6 672. 0 72. 0 19. 3 . 3	0.6 2.7 2.7 2.1 3.8 38.0 38.1 26.4 37.9 7.5 2.5 3.9 1.3 6.5 1.1 7.3 1.0 4.1 5.8 4.9 6.3 2.4 4.8 5.6 7.8 8.1 3.0 6.3 8.1 1.0 6.3 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0

Table III shows in its first section (sec. A) the performance record of an orange tree of the Valencia strain for the season of 1915, as entered on the annual record form, and also the 4-year period performance record of the same tree. The detailed annual record is copied from the field notebook and shows the data therein recorded for each individual tree. The summary of this annual record is copied on the period form, as shown by the second

part of section A of the table. In order to economize space in publication, the detailed record form as shown here has been rearranged from that actually used in the investigations, but the summary records presented are in substantially the same form in which they were recorded. By means of this summary record form it is possible not only to compare the total crops for successive seasons, but also to study the relative amount of fruit in the different grades and sizes.

Sections B and C of Table III, showing both annual and 4-year period performance records for individual trees of the Corrugated and Barren strains, are given for comparison with section A of the same table. Considered as a series, these tabular statements show some of the great variations between trees of different strains, especially with respect to the amount of their total crops and the quality of the crops as indicated by the relative proportions of fruit of the different grades. These variations illustrate the relative value of these strains and are typical of the differences in production that exist in other strains of this variety. Considered as a record of individual trees, this table shows in detail the character of successive crops and their variations in quality and quantity.

Table III.—Performance record of individual Valencia orange trees of different strains. showing the weight and number of the fruits of each grade and size and the variable fruits produced, detailed for the season of 1915, and also summarized for four seasons, 1912 to 1915, inclusive.

[This summarized record illustrates the method of assembling the data of successive seasons for careful comparison and study. In practice, the variable fruits produced by the tree each season and the record of the number of seeds found in representative fruits are listed on the back of the forms. The weights are given in pounds and ounces, except that the fractional averages are expressed decimally in pounds.]

SECTION A.—TREE No. 23-85-10, VALENCIA STRAIN, LISTED IN RANK 32 IN TABLES I AND II.

DETAILED	RECORD	FOR	THE	SEASON	OF	1915.1
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_	Orchard	grade.	Standard grade.		Tota	al.	Cull fr	uits.	Grand	total.
Sizes of fruits.	Weight.	Num- ber.	Weight.	Num- ber.	Weight.	Num- ber.	Weight.	Num- ber.	Weight.	Num- per.
288 and smaller	Lbs. oz. 1 10 5 14 18 12 58 5 25 1 9 9 0 8 0 0 0 0 0 0	6 20 57 155 59 21 1 0 0	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	41 755 37 33 6 3 0 0	Lbs. oz. 12 4 29 14 31 14 71 6 27 11 11 1 0 8 0 0 0 0 0 0	47 95 94 188 65 24 1 0 0	Lbs. oz.		Lbs. oz.	
. Total	119 11	319	64 15	195	184 10	514	0 12	4	185 6	518
Seeds found: Small fruits Medium fruits Large fruits		1 4 5		3 7 7		4 11 12		3 1 1		7 12 13

¹ Notes.—Total crop, 4½ boxes. Variable fruits: Australian, 1; Ridged, 2; Creased, 1; Raised section, 3; Abnormal section, 1; Split side, 1; Off bloom, 2.

Table III.—Performance record of individual Valencia orange trees of different strains, showing the weight and number of the fruits of each grade and size and the variable fruits produced, detailed for the season of 1915, and also summarized for four seasons, 1912 to 1915, inclusive—Continued.

SECTION A.—TREE No. 23-85-10, VALENCIA STRAIN, LISTED IN RANK 32 IN TABLES I AND II—Continued.

SUMMARIZED RECORD FOR FOUR SEASONS.

Grades and sizes.	1912	1913	1914	1915	Total.	Aver- age.
Weight of fruits: Orchard grade Standard grade Culls		Lbs. oz. 96 9 19 1 7 9	Lbs. oz. 111 4 16 11 2 8	Lbs. oz. 119 11 64 15 0 12	Lbs. oz. 418 13 119 12 17 13	104.7 29.9 4.5
Grand total	117 6	123 3	130 7	185 6	556 6	139.1
Sizes— 288 and smaller 250 216 200 176 150 126 112 96 80 and larger	8 · 3 8 · 3 30 · 9 20 · 14 25 · 14 4 · 7 4 · 4 2 · 0	36 1 22 1 14 12 21 9 9 5 7 11 2 15 1 4 0 0 0 0	36 1 44 10 26 15 17 5 3 0 0 0 0 0 0 0 0 0 0 0	12 4 29 14 31 14 71 6 27 11 11 1 0 8 0 0 0 0 0 0	89 10 104 12 81 12 140 13 60 14 44 10 7 14 5 8 2 0 0 12	22. 4 26. 2 20. 4 35. 2 15. 2 11. 1 2. 0 1. 4
Total	110 6	115 10	127 15	184 10	538 9	134.6
Number of fruits: Orchard grade Standard grade Culls	46	295 77 78	302 53 13	319 195 4	1,120 371 112	280. 0 92. 8 28. 0
Grand total	267	450	368	518	1,603	400.8
Sizes— 288 and smaller 250. 216. 200. 176. 150. 126. 112. 96. 80 and larger	24 22 73 45 50 8 7	161 73 42 54 20 15 5 - 2 0	119 124 67 39 6 0 0 0 0	47 95 94 188 65 24 1 0 0	344 316 225 354 136 89 14 9	86. 0 79. 0 56. 25 88. 5 34. 0 22. 25 3. 5 2. 25 . 75 . 25
Total	250	372	355	514	1,491	372.75

SECTION B.—TREE NO. 23-85-7, CORRUGATED STRAIN, LISTED IN RANK 47 IN TABLES I AND II.

[In 1912 and 1913 the fruits of this tree were not assorted according to size.]

Detailed Record for the Season of 1915.1

	Orchard grade.		Standard grade.		Total.		Cull fruits.		Grand total.	
Sizes of fruits.	Weight.	Num- ber.	Weight.	Num- ber.	Weight.	Num- ber.	Weight.	Num- ber.	Weight.	Num- ber.
288 and smaller	Lbs. oz. 0 0. 2 0. 2 4. 15 3. 8 13. 8 14. 6 6	0 7 7 39 20 18 12	Lbs. oz. 4 1 8 10 10 12 14 6 18 2 4 15 2 5	15 26 29 36 40 10 4	Lbs. oz. 4 1 10 10 13 0 29 9 26 15 13 13 8 11	15 33 36 75 60 28 16	Lbs. 02.		Lbs. 02.	
112 96 80 and larger	0 0 0 0 0	0 0	0 11 0 0 0 0	0 0	0 11 0 0 0 0	0 0				
Total	43 8	103	63 14	161	107 6	264	0 10	. 3	108 0	267
Seeds found: Small fruits Medium fruits Large fruits		.7 4 8		2 2 4		9 6 12		0 1 2		9 7 14

¹ Notes.—Total crop, 2½ boxes. Corrugated fruits tend to be long and pear shaped, greenish yellow in color. Sports: Wrinkled, 1; Corrugated, 132; Ridged, 7; Creased, 4; Sunken section, 1; Yellow section, 1; Long, 2; Green section, 1; Ridged and Creased, 3; Granular, 11; Half Corrugated, Half Standard, 1.

Table III.—Performance record of individual Valencia orange trees of different strains, showing the weight and number of the fruits of each grade and size and the variable fruits produced, detailed for the season of 1915, and also summarized for four seasons, 1912 to 1915, inclusive—Continued.

SECTION B.—TREE No. 23-85-7, CORRUGATED STRAIN, LISTED IN RANK 47 IN TABLES
I AND II—Continued.

SUMMARIZED RECORD FOR FOUR SEASONS.

Grades and sizes.	1912	1913	1914	1915	Total.	Average.
Weight of fruits: Orchard grade Standard grade Culls.	18 1 119 9	Lbs. oz. 31 1 76 2 3 4	Lbs. 6z. 20 14 114 4 2 7	Lbs. oz. 43 8 63 14 0 10	Lbs. oz. 113 8 373 13 9 2	28. 4 93. 5 2. 3
Grand total	140 7	110 7	137 9	108 0	496 7	124.1
Sizes— 288 and smaller 250 216 200 176 130 126 112 96 80 and larger			56 11 40 11 15 4 16 9 3 11 2 4 0 0 0 0 0 0	4 1 10 10 13 0 29 9 26 15 13 13 8 11 0 11 0 0		
Total	137 10	107 3	135 2	107 6	477 5	121.8
Number of fruits: Orchard grade Standard grade Culls.		89 216 36	61 339 12	103 161 3	292 982 60	73. 0 245. 5 15. 0
Grand total	314	341	412	267	1,334	333. 5
Sizes— 288 and smaller 250 216 200 176 150 126 112 96 80 and larger			198 115 38 38 7 4 0 0 0	15 33 36 75 60 28 16 1 0		
Total	305	305	400	264	1,274	318. 5

SECTION C.—TREE No. 37-58-26, BARREN STRAIN, LISTED IN RANK 105 IN TABLES I AND II.

DETAILED RECORD FOR THE SEASON OF 1915.1

	Orchard grade.		Standard grade.		Total.		Cull fruits.		Grand total.	
Sizes of fruits.	Weight.	Num- ber.	Weight.	Num- ber.	Weight.	Num- ber.	Weight.	Num- ber.	Weight.	Num- ber.
288 and smaller 250. 216. 200. 176. 150. 126. 112. 96. 80 and larger.	Lbs. oz. 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	Lbs. oz. 1 0 0 0 0 0 0 6 0 0 0 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4 0 0 1 0 1 0 0 0 0 0	Lbs. oz. 1 0 0 0 0 0 0 6 0 0 0 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4 0 0 1 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0	Lbs. oz.		Lbs. oz.	
Total			1 14	6	1 14	6	0 15	4	2 13	10
Seeds found: Small fruits Medium fruits Large fruits		(2) (2) (2)		2 2 2 5		2 2 5		1 2 3		. 4

¹ No sports.

² Seeds in fruits of the Orchard grade were not counted.

Table III.—Pe formance record of individual Valencia orange trees of different strains, showing the veight and number of the fruits of each grade and size and the variable fewits produced, detailed for the season of 1915 and also summarized for four seasons, 1912 to 1915, inclusive—Continued.

SECTION C.—TREE No. 37-58-26, BARREN STRAIN, LISTED IN RANK 105 IN TABLES I AND II—Continued.

SUMMARIZED RECORD FOR FOUR SEASONS.

Grades and sizes.	1912	1913	1914	1915	Total.	Aver- age.
Weight of fruits: Orchard grade Standard grade Culls	0 0	Lbs. oz. 0 8 1 7 0 2	Lbs. oz.	Lbs. oz. 0 0 1 14 0 15	Lbs. oz. 0 8 5 6 8 14	0. 13 1. 34 2. 22
Grand total	9 14	2 1	0 0	2 13	14 12	3, 69
Sizes— 288 and smaller. 250. 216. 200. 176. 150. 126. 112. 96. 80 and larger.	0 9 0 0 1 2 0 0 0 6 0 0 0 0 0 0 0 0 0 0	1 7 0 0 0 0 0 0 8 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 0 0 0 0 0 0 0 0 6 0 0 0 8 0 0 0 0 0 0 0 0	3 0 0 0 0 1 2 0 14 0 6 0 8 0 0 0 0 0 0	. 75 . 28 . 22 . 09 . 13 0 0
Total	2 1	1 15	0 0	1 14	5 14	1.4
Number of fruits: Orchard grade Standard grade Culls	0 6 40	1 6 2	0 0	0 6 4	1 18 46	4. 8 11. 8
Grand total	46	9	0	10	65	16. 8
Sizes— 288 and smaller 250. 216. 200. 176. 150. 126. 112. 96. 80 and larger.	2 0 3 0 1 0 0 0 0 0 0 0	6 0 0 1 1 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4 0 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0	12 3 2 1 1 0 0 0 0	3 . 75 . 5 . 25 . 25 0 0 0
Total	. 6	7	0	- 6	- 19	4. 7

A comparison of the records of the trees listed in ranks 45, 51, and 54 of Tables I and II will bring out further the variations in production that may occur within a strain as that term is here employed. These three trees produced practically the same average yields for the 4-year period, but their crops for each year have varied considerably and in very different ratios.

The tree listed in rank 45 is representative of a small class which shows a gradual decrease in production each year. This is, of course, an undesirable condition, and in commercial practice such trees should be top-worked as soon as their production falls below the point of profitableness. The tree listed in rank 51 is representative of the most desirable group of any commercially valuable strain, namely, that one in which the crop production is gradually increased from year to year. The trees recorded in ranks 2, 5, 9, 16, 17, 21, 27, and 37

are also typical of this group, and many others in the list are classified with these, though they are not as representative as those mentioned. The tree listed in rank 54 is typical of the group commonly called alternate bearers or biennial bearers; that is, a season of normal or high

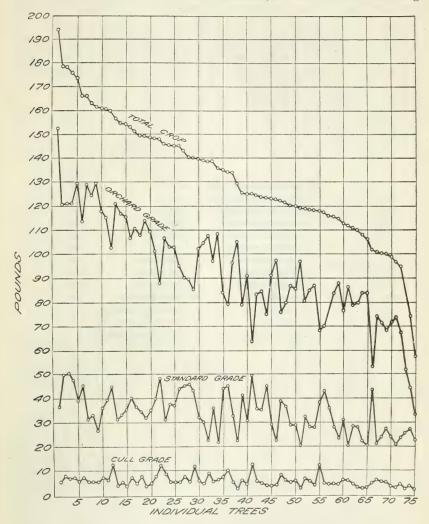


Fig. 1.—Diagram showing the average annual production of the 75 individual trees of the Valencia strain in the investigational performance-record plat for the 4-year period, 1912 to 1915, inclusive. The trees are here ranked in the order of their average total crop, expressed in pounds. The weight of the fruit of the three commercial grades is also shown for each tree.

production is followed by a small crop the next year, with the return of a normal crop the succeeding season. Usually these trees show a general increase in production during a period of years. This tree (rank 54) produced its small crops in the even years. The tree listed in rank 35 is also of this alternate-bearing character but bears its small

crops in the odd years. This group of trees may not be unprofitable to the grower, but they are not as desirable as those with a regular bearing habit.

The variation in the crop production of the individual trees of the Valencia strain in the performance-record plat is shown graphically in figure 1. The average annual crops of these 75 trees, which are planted in a single orchard block, vary from $57\frac{1}{2}$ pounds to $193\frac{3}{4}$ pounds, but 64 of them, or 85 per cent of the total number, averaged between 100 and 160 pounds annually. This diagram also shows the variations in the amount of Orchard, Standard, and Cull grade fruit borne by trees producing practically the same total crops.

Section A of Table IV shows the average annual crop of all the Valencia orange trees occurring in the investigational performance-record plat in groups of strains and of select trees within some of these



Fig. 2.—Diagram showing the percentages of fruit of the different commercial grades in the average annual production of the trees of the various strains found in the investigational performance-record plat of Valencia oranges for the 4-year period, 1912 to 1915, inclusive. The strains are listed in the order of their relative production by weight of fruit of the Orchard grade.

strains. The groups are arranged according to the weight of the average annual crop of each individual tree. The presence of Barrenstrain trees will probably be a surprise to many Valencia growers. Trees of this strain and other low-producing strains when noticed in the orchards have usually been considered to be biennial bearers, in their off year. Records, such as those here reported, show that in some instances, at least, this theory is baseless. Here are shown the records of two trees of the Barren strain which have borne practically uniform crops for the past four years, with an average yearly crop of 6 pounds per tree, only 3.7 pounds being commercial fruit suitable for the market. It will be seen that nearly all the other sporting strains produced much less than is ordinarily expected from the average orchard tree and all of them averaged less than was produced by the trees of the Valencia strain.

Section B of Table IV shows the groups of trees of the different strains ranked according to the average annual crop of first, or Orchard, grade fruit produced. This change alters the relative position of several of the strains, but the Valencia strain is still at the head and the Barren strain at the foot of the list.

Table IV.—Average annual crop of groups of trees of the variable strains of the Valencia orange occurring in the investigational performance-record plat, showing production by commercial grades for the 4-year period, 1912 to 1915, inclusive.

Trees.	Trees.			al production per tree pounds).				
Description,	Num- ber,	Orchard grade.	Standard grade.	Cull fruits.	Total crop.			
Section A.—Ranked according to their average total crops: Highest producing Valencia strain Valencia strain Sporting strain Corrugated strain Long strain Coarse strain Rough strain Lowest producing Valencia strain Small Yellow strain Unproductive strain Smooth strain Yellow strain Yellow strain Lowest producing trees Barren strain	10	125. 9 92. 8 80. 7 24. 7 66. 5 53. 1 27. 6 61. 6 36. 1 50. 0 60. 6 36. 5 28. 2	39. 6 33. 6 39. 0 87. 4 35. 8 40. 4 69. 2 25. 8 36. 8 22. 8 21. 8 28. 4 18. 2 2. 2	6. 1 5. 5 7. 9 1. 4 4. 9 6. 2 1. 7 3. 7 6. 2 4. 4 3. 4 7. 2 4. 0 2. 3	171. 6 131. 8 127. 6 113. 5 107. 2 99. 7 98. 5 91. 1 77. 1 75. 8 72. 1 50. 4 6. 6			
General average		78.6	36.4	5. 1	120			
Section B.—Ranked according to the weight of fruit of Orchard grade produced: Highest producing Valencia strain Valencia strain Sporting strain Long strain Lowest producing Valencia strain Smooth strain Coarse strain Unproductive strain Yellow strain Small Yellow strain Lowest producing trees Rough strain Corrugated strain Barren strain	3 8 1 1 10 2 7	125. 9 92. 8 80. 7 66. 5 61. 6 60. 6 53. 1 50. 0 36. 5 36. 1 28. 2 27. 6 24. 7	39.6 33.6 39.0 35.8 25.8 11.8 40.4 22.8 28.4 36.8 18.2 69.2 87.4 2.8	6.1 5.5 7.9 4.9 3.7 3.4 6.2 4.4 7.2 6.2 4.0 1.7 1.4 2.3	171. 6 131. 8 127. 6 107. 2 91. 1 75. 8 99. 7 77. 2 79. 1 50. 4 98. 5 113. 8			
General average		78.6	36.4	5.1	120			

It should be noted that the 10 highest producing trees of the Valencia strain are also the 10 highest producing trees in the plat, irrespective of strain. Table I shows that the highest producing tree of a strain other than the Valencia is twenty-eighth in rank.

Figure 2 shows graphically the percentages of Orchard, Standard, and Cull grade fruits in the average annual production of groups of trees of the various strains represented in the investigational performance-record plat. This diagram can best be interpreted by comparing it with Table IV, which shows the actual average crops of these groups of trees of the different strains. Although the trees of the Smooth strain head the list in figure 2, their actual average production was only 60.6 pounds of Orchard-grade fruit, with a total production of 75.8 pounds, so that in value to the grower they are

far below the trees of the Valencia strain. The trees of the Barren strain are again found at the foot of the list.

The percentages of the two grades making up the commercial crops in the various strains are shown graphically in figure 3. These data are based on the weight of the average production per tree for the 4-year period, and the strains are arranged in the order of the percentage of first, or Orchard, grade fruit produced. This diagram, like figure 2, can be interpreted rightly only by comparison with the data of actual yield as shown in Table IV.

Figure 4 shows the average weight of fruit of the different commercial sizes and grades which was produced during the 4-year period on the 10 highest producing trees in the investigational performance-record plat in comparison with the corresponding yields of the 10

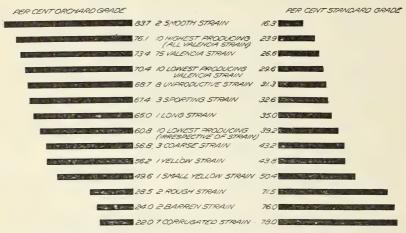


Fig. 3.—Diagram showing the percentages of Orchard and Standard grade fruit per tree in the average annual commercial crops of the trees of the various strains found in the investigational performance-record plat of Valencia oranges for the 4-year period, 1912 to 1915, inclusive. The strains are listed according to their proportion by weight of Orchard (or first) grade fruit.

lowest producing trees of the plat. This diagram illustrates graphically the fact that the heaviest bearing trees produce a larger proportion of the most desirable and valuable sizes of fruits than the lowest producing trees. The most productive trees also bear the largest proportion of fruit of first, or Orchard, grade, so that they are more profitable from the standpoint of quality and size of fruits, in addition to being high producers. On the other hand, the lowest producing trees bear a much larger proportion of extremely small fruits and fruits of the Standard (or second) grade.

Figure 5 is similar to figure 4, in that it shows the percentages of fruit of the different commercial sizes which were produced by the 10 highest and the 10 lowest yielding trees in the performance-record plat, but in this diagram the figures are based on the number

of fruits produced instead of on the weight of the fruits. This serves to emphasize the small-sized fruits and the Cull grades.

Figure 6, like figures 4 and 5, shows the average number of fruits produced by the 10 highest and 10 lowest yielding trees, but the yields of fruit of the different sizes are expressed as percentages of a packed box. The highest producing trees bore an annual average of 2.15 packed boxes per tree, as compared with a yield of 0.63 of a packed box from the lowest yielding trees. This difference indicates something of the value and desirability of growing only trees of the best strain in commercial orchards. These yields are very low, especially those from the best trees, but it should be remembered in this con-

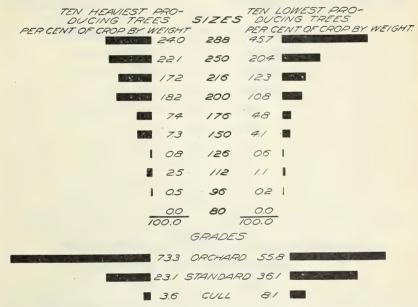


FIG. 4.—Diagram showing the variations in the commercial sizes and grades of fruit on the 10 heaviest producing trees in comparison with the 10 lowest producing trees in the experimental performance-record plat of Valencia oranges. The percentages are based on the weight of the average crop per tree for a 4-year period. Figure 5 shows similar variations based on the number of fruits produced.

nection that several of the conditions which were considered essential for the location of the performance-record plats were prohibitive to the production of large crops. It is also interesting and important, especially from the standpoint of dollars and cents, to note that the highest producing trees bore 33 per cent of their crop in the most desirable and valuable sizes, while the low-yielding trees had only 18.7 per cent of their crop in these sizes. Figuring the productions here shown on the acre basis at the rate of planting in the performance-record plat, it is found that the high producing trees bore 172 packed boxes as compared with 50.4 packed boxes per acre from the lowest producing trees. The values, delivered at the packing house, of

these calculated crops figured on the basis of the actual prices obtained during the investigational period, and considering the variations in grades and sizes produced per acre by the two groups of trees, would be \$311.32 and \$84.17, respectively.

This correlation of heavy yield and superior commercial grade in the production of trees of the Valencia strain is very important from the standpoint of the stabilization of the variety through bud selection based on performance records. Figures 4, 5, and 6 indicate that the propagation from the highest yielding trees means not only heavier production, but also improvement in the grade and size of fruit.

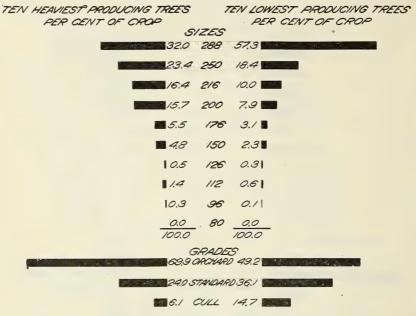


Fig. 5.—Diagram showing the variations in the commercial sizes and grades of fruit on the 10 heaviest producing trees in comparison with the 10 lowest producing ones in the investigational performance-record plat of Valencia oranges. The percentages are calculated from the number of fruits in the average crop per tree for a 4-year period. Figure 4 shows similar variations based on the weight of the crop.

Figure 7 shows graphically the relative number of variable fruits in the total crops of trees of the various strains of the Valencia orange occurring in the investigational performance-record plat. The diagram illustrates very well the comparative freedom from such fruits which characterizes the trees of the Valencia strain of this variety and the larger proportions of variable fruits which occur in the poorer and more undesirable strains. It is interesting to note that on the trees of the Barren strain, in addition to the almost entire lack of a crop of any sort, 84.3 per cent of what was produced was made up of sporting fruits. In counting the variable fruits on a tree only those showing some variation from the general type of the fruits

produced by that tree were recorded. For instance, in the case of the trees of the Valencia strain all other than Valencia fruits were considered as variable ones, while for the trees of the Corrugated strain all other than Corrugated fruits were recorded. For the trees of the Sporting strain all other than typical Valencia-strain fruits were counted as variable ones.

The comparative freedom of many trees of the Valencia strain from variable fruits indicates the possibility of controlling bud variability in propagation in commercial orchards by bud selection based on performance records.

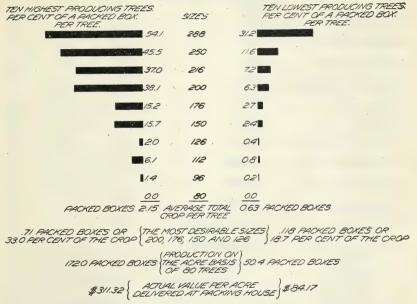


FIG. 6.—Diagram showing the average number of fruits of the various commercial sizes produced annually during the 4-year period, 1912 to 1915, inclusive, by the 10 highest yielding and the 10 lowest yielding trees in the investigational performance-record plat of Valencia oranges. This production is expressed as percentages of a packed box calculated from the average number of fruits of the different sizes. The percentage of most desirable sizes is also stated, and the production on the acre basis is shown and its value calculated from the actual returns during the four years.

The average number of seeds per fruit produced by trees of some of the various strains of the Valencia orange is shown in figure 8. This diagram, in comparison with Table IV, shows a very close correlation between the number of seeds per fruit and the comparative amount of Orchard-grade fruit produced by trees of the different strains here listed. It appears that the presence of three or four seeds per fruit is characteristic of the Valencia strain.

Many other interesting characteristics of the various strains of the Valencia orange have been studied during the progress of these investigations, but those presented here are among the most marked and important. All the data show that it is very important to isolate the strains of this variety and, for commercial purposes, to propagate only the best of them.

COMPARATIVE VALUE OF THE STRAINS.

Any statement of the comparative value of the various strains of the Valencia orange must be understood as applying only to present conditions. What the future of some of these strains may be under different cultural and market conditions no one can now say.

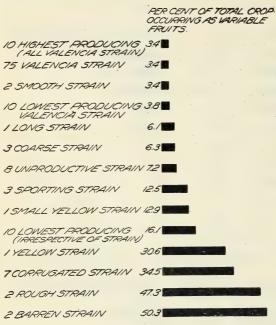


Fig. 7.—Diagram showing the relative number of variable fruits found in the average total crops of trees of different strains of the Valencia orange in the investigational performance-record plat during the 4-year period, 1912 to 1915, inclusive.

Under existing conditions, only one of the twelve strains here described is of commercial value, though three others are of possible value to orange growers. some cases the inferior strains are not only unproductive, but the fruits produced by them are poor in quality or unattractive in appearance

From a commercial standpoint the Valencia strain is the most valuable found so far in these investigations. Some others, especially the Smooth, Yellow, and Navel

strains or selections from them, may prove desirable additions to the present varieties of summer-ripening oranges. After the value of any new strain has been determined, considerable time is required for its introduction and trial in sections having different climatic and soil conditions. This work of necessity is of a careful, experimental nature, requiring several years to obtain reliable results.

The remaining strains described in this bulletin are undesirable in nearly every respect, as will be readily apparent from the records and descriptions of them already presented. Since commercial orange growing is conducted for the profit to be obtained thereby, the further propagation of these inferior strains or their culture in established plantings should be discouraged. For these reasons it seems wise for the present to concentrate effort upon the stabilization of the Valencia strain by means of bud selection based on performance records and intimate knowledge of the individual tree.

THE UNINTENTIONAL PROPAGATION OF UNDESIRABLE STRAINS.

The prevailing method of securing bud wood of the Valencia variety has been to cut it either from bearing trees in established orchards, or, to a limited extent, from young nursery or nonbearing

trees. Where the buds have been cut from bearing trees little or, usually, no selection of parent trees has been practiced.

Bud variations have been propagated unintentionally by nurserymen because the existence and importance of such variations have been unknown until very recently. The occurrence of individual trees in the performance-record plats bearing mainly fruit identical with the fruit variations occurring individually or as limb sports in other trees and the existence of similar limb sports in the parent trees from which the performancerecord trees were propagated are evidences of

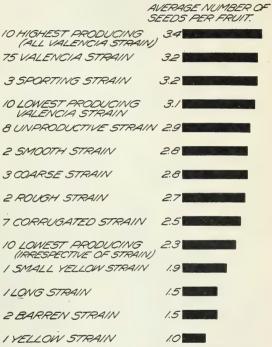


Fig. 8.—Diagram showing the average number of seeds found in fruits from the trees of the various strains of the Valencia orange in the investigational performance-record plat during the 4-year period, 1912 to 1915, inclusive. A large, a medium, and a small fruit from each of the three grades, that is, nine fruits from each tree, were cut each season and the seeds from each fruit carefully counted.

the propagation of these diverse strains from bud variations. From the fact that the most variable trees are usually the most vigorous in vegetative growth and that the most vigorous-growing, nonfruit-bearing wood has been usually selected for propagation, the proportion of trees of the variable strains in established orchards has been increasing continually in the later plantings as compared with the early propagations of this variety. Because of the lack of knowledge in the past of the existence of bud variations, no one can

be blamed for the unfortunate and undesirable propagations of poor strains which have been so generally made. However, now that bud variability in trees of this variety has been established definitely, any propagator who does not carefully select his bud wood from trees of the best strain on the basis of their performance records will not be able to excuse the poor results of his propagations on the ground of the lack of information on this subject.

THE ISOLATION OF STRAINS THROUGH BUD SELECTION.

In the beginning of these investigations fruit-bearing bud wood was selected from limb variations in trees of the Valencia and other strains and top-worked in bearing trees in order to get them into fruiting quickly. About 100 such propagations have come into bearing, and as far as can be judged from trees of their age they have in every instance reproduced the strains which were propagated.

Later, as opportunity has permitted, the bud variations have been propagated on nursery stocks. These progeny tests will require several years to secure reliable performance-record data, but in so far as such trees have fruited the results have confirmed those secured by top-working bearing trees.

Enough evidence has been secured in these investigations to warrant the assertion that all of the 12 strains described in this bulletin can be isolated through bud selection. It seems probable that other strains also can be isolated in the same manner.

This conclusion does not include the idea that bud variation within these strains can be entirely eliminated. On the contrary, the investigations have shown that variation will likely continue as long as the strains are propagated. What has been demonstrated is that variation can be controlled by bud selection to such an extent that the individuals of a strain can be brought to a condition of practical uniformity as regards crop production and other characteristics.

Bud selection should be based on definite knowledge of the individual tree, which can be secured most satisfactorily by means of performance records and careful study. A thorough investigation of most of the established Valencia orchards in the light of individual-tree records will reveal the necessity for greater care in selecting buds for use in propagation.

The bud wood found most satisfactory in these investigations is that bearing typical fruits of the strain desired and of the one or two periods of growth preceding the production of the fruits. One or more fruits of the desired strain should be cut off with each bud stick as an indication or label showing the probable character of fruit that will be produced by the buds immediately back of the fruit. Figure 9 shows a bud stick cut in this manner with typical fruits of

the Valencia strain attached. When such bud wood is used, a larger number of desirable buds can be secured from heavy bearing

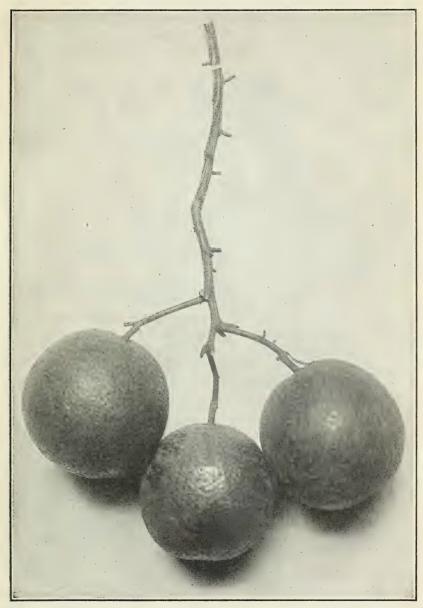


Fig. 9.—A Valencia orange bud stick of fruit-bearing wood cut with typical fruits of the Valencia strain attached. (About one-half natural size.)

trees than from less productive ones. When bud wood of this character was first recommended for use, nurserymen and propagators were almost unanimous in their objections to it on account of its

small size. Since that time this prejudice has gradually disappeared and thousands of buds from such wood have been used successfully in both experimental and commercial propagations.

If bud wood is desired at times when the fruits are unripe or when the bud wood is not in condition for use, it should be cut when the ripe fruits are available for inspection and stored in sterilized moss until needed.

The identification of a valuable strain is of vital commercial importance to the entire orange industry. The segregation of the inferior strains is of interest only from an experimental standpoint. The propagation of valuable strains will result not only in an increased production, but what is equally important, in a uniform production of crops of greater commercial value.

TOP-WORKING UNDESIRABLE TREES.

Healthy Valencia orange trees of inferior or undesirable strains can be successfully top-worked, using the kind of bud wood described in the preceding paragraphs. This bud wood can be used either as grafts or, as is the usual practice, for budding directly into some of the main limbs.

The selection of trees to be top-worked should be made before their fruits are picked. While trees of some inferior strains are easily recognized from their habits of growth or foliage characteristics, it is desirable wherever possible to base the selection of trees to be top-worked on their performance records and fruit characteristics. The selection of bud wood for top-working purposes should also be based on individual-tree performance records associated with an intimate knowledge of tree and fruit characteristics secured from careful observations in the orchards.

In top-working established trees, two or three of the main limbs should be selected for the foundation of the new heads. Two buds should be inserted in each of these limbs, from 12 to 24 inches above the fork of the trunk. After the buds have united with the older limbs, these limbs should be cut off about 6 inches above the point of insertion of the buds, and the cut surfaces covered with grafting wax or some pruning compound. The trunks and remaining portions of the limbs should be heavily whitewashed or otherwise protected, in order to prevent injuries from exposure. About a year later the stubs of the original limbs should be cut back close to the young buds, making the cuts oblique in order to facilitate their healing, and the cut surfaces should be again waxed or painted. In every case great care must be exercised in removing all sprouts from the trunk and old limbs in order to develop the new heads entirely from the inserted buds.

It is essential that the rebudded trees be inspected from time to time for the first year or two, in order that they may be cared for intelligently. The growth from the rebuds must be thinned occasionally, so that strong, open, and well-arranged tops will be secured. Insect enemies attacking the tender growth of the rebuds must be Ten-year-old trees of inferior strains of the Valencia orange rebudded to the Valencia strain by the use of fruit-bearing bud wood usually will begin bearing in two or three years, reaching normal production in about four or five years.

As a result of these investigations, more than 5,000 undesirable Valencia orange trees in California orchards have been top-worked with buds selected from the most desirable trees in the investigational performance-record plats. The oldest tops grown from such buds are now more than four years old. So far not a single failure has been observed in transmitting the characteristics of the parent trees by means of the selected buds. Several thousand trees of undesirable strains of the Washington Navel orange and Marsh grapefruit also have been top-worked with selected buds of those varieties in the same manner during the past five years with equal success. This positive evidence as to the possibility of improving undesirable trees by top-working has resulted in the widespread adoption of this practice by California citrus growers.

SUMMARY.

In proportion to the area of the established Valencia orange orchards in California, the Valencia orange is being planted more extensively in that State than any other variety. It is now the leading summer-bearing orange variety grown in the State.

The object of these investigations is to discover methods of prac-

tice for the conservation and stabilization of the variety.

The plan of the investigation is a careful, detailed, and intimate study of the individual tree, the results of which are called individualtree performance records.

The Valencia trees in these investigations were propagated from the variety originally introduced into California from Florida under

the name of Hart (Hart's Tardiff).

In the performance-record plats considered in these investigations there are trees of 12 important strains and of many minor strains which have originated from bud mutations.

The frequent occurrence of bud variations in trees of this variety is of definite importance in the consideration of means for the improvement of the production of established orchards, the isolation of the best strains, and the control, as far as possible, of bud variation through bud selection based on performance records.

The most valuable strain of this variety is the Valencia. Some other strains may be of value under certain conditions.

Trees of the Valencia strain are most productive and bear the largest quantities of the best-grade fruit and the most valuable sizes for commercial purposes.

Trees of the Valencia strain produce fewer variable fruits than

those of other strains.

All the strains described can be isolated through bud selection based on individual-tree performance records.

Healthy trees of undesirable strains in established orchards can be top-worked and their value improved thereby when fruit-bearing bud wood from selected trees of the Valencia strain is used for this purpose. A practical method for locating such trees and bud wood and a discussion of their treatment in commercial orchards are presented in Farmers' Bulletin 794 of the United States Department of Agriculture, "Citrus-Fruit Improvement: How to Secure and Use Tree-Performance Records."

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